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GEOLOGICAL SURVEY OF ALABAMA

Philip E. LaMoreaux
State Geologist

DIVISION OF WATER RESOURCES

Doyle B. Knowles
Chief Hydraulic Engineer

BULLETIN 73

GEOLOGY AND GROUND-WATER RESOURCES OF ST. CLAIR COUNTY, ALABAMA

A Reconnaissance

By Lawson V. Causey

Prepared by the
United States Geological Survey
in cooperation with the
Geological Survey of Alabama

UNIVERSITY, ALABAMA

1963

STATE OF ALABAMA

Honorable George C. Wallace, Governor

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University, Alabama
March 14, 1963

Honorable George C. Wallace
Governor of Alabama
Montgomery, Alabama

Dear Governor Wallace:

I have the honor to transmit the manuscript of a report entitled "Geology and Ground-Water Resources of St. Clair County, Alabama, a Reconnaissance" by Lawson V. Causey, with the request that it be printed as Bulletin 73 of the Geological Survey of Alabama.

According to the report, the chief sources of water for wells and springs in the county are the Conasauga Formation, Cambrian and Ordovician dolomites, Floyd Shale, and Pottsville Formation. The Ordovician limestones, Fort Payne Chert, Ste. Genevieve Limestone, Gasper Formation, Hartselle Sandstone, and Bangor Limestone, which have smaller areal extent, also yield large quantities of ground water to wells and springs. The quality of the ground waters is generally good; however, the hardness of water from some of the aquifers, the sulfurous odor of water from a few wells that penetrate the Conasauga Formation, and the high iron content of water from the Floyd Shale and Pottsville Formation may require treatment of the water for some purposes.

Ground water from wells and springs is the source for most domestic, stock, industrial, and public supplies in St. Clair County. The estimated daily average ground-water withdrawal in 1960 was 1,825,000 gallons.

Respectfully,

Philip E LaMoreaux

Philip E. LaMoreaux
State Geologist

CONTENTS

Page

Abstract 1
Introduction 2
  Location and economy of area 3
  Purpose and scope 3
  Previous investigations 5
  Topography and drainage 5
  Climate 6
  Well- and spring-numbering system 6
  Acknowledgments 6
Ground water 8
  Source 8
  Occurrence and movement 8
  Water-table and artesian conditions 10
  Water-level fluctuations 12
  Recovery of water 15
    Drilled wells 15
    Dug wells 19
    Springs 19
  Use of water 20
Quality of water 22
  Chemical analyses 23
Geology 27
  Geologic formations and their water-bearing properties 27
    Cambrian System 27
      Rome Formation 27
      Conasauga Formation 30
    Cambrian and Ordovician Systems 30
      Ketona(?), Copper Ridge, and Chepultepec Dolomites undifferentiated 30
    Ordovician System 31
      Longview, Newala, and Odenville Limestones 31
      Mosheim, Lenoir, and Little Oak Limestones 32
      Chickamauga Limestone 33
    Silurian System 33
      Red Mountain Formation 33
    Devonian System 34
      Frog Mountain Sandstone 34
      Chattanooga Shale 34
    Mississippian System 34
      Maury Formation 34

CONTENTS

Page

Geology—Continued

Geologic formations and their water-bearing properties—Continued

Mississippian System—Continued

Fort Payne Chert and Tuscumbia Limestone.................. 34
Ste. Genevieve Limestone, Gasper Formation, and Hartselle Sandstone 35
Bangor Limestone.................. 36
Floyd Shale.................. 36
Pennington and Parkwood Formations 37
Pennsylvanian System.................. 37
Pottsville Formation.................. 37
Economic geology 38
Coal 38
Clay and shale.................. 39
Limestone.................. 39
Chert.................. 39
Iron ore 39
Summary.................. 40
Selected references.................. 41
Basic data 43

ILLUSTRATIONS

[Plates are in map packet]

Plate 1. Location of wells and springs, and generalized area of artesian flow, St. Clair County, Ala.
2. Generalized geologic map of St. Clair County, Ala.

Page

Figure 1. Area studied and areas of other ground-water studies in Alabama 4
2. Well- and spring-numbering system used in this report...... 7
3. Divisions of subsurface water 9
4. Water-table and artesian conditions.................. 11
5. Changes in water level in well S-2 at Ragland and precipitation at Ashville.................. 13
6. Changes in water level in well BB-2 at Pell City and precipitation at Ashville 14
7. Changes in water level in wells W-2 and BB-3 and precipitation at Ashville 16

Page

Figure 8. Changes in discharge from spring M-8 at Springville and precipitation at Ashville........................ 17
9. Median hardness and chloride content of water from wells and springs in St. Clair County......................... 26

TABLES

Table 1. Chemical analyses of water from selected wells and springs in St. Clair County, Ala. 25
2. Generalized section of the geologic formations in St. Clair County and their water-bearing properties properties 28
3. Records of wells and springs in St. Clair County, Ala. 44
4. Sample logs of wells in St. Clair County, Ala................. 73
5. Drillers' logs of wells in St. Clair County, Ala. 77

GEOLOGY AND GROUND-WATER RESOURCES OF ST. CLAIR COUNTY, ALABAMA

A Reconnaissance

By Lawson V. Causey

ABSTRACT

St. Clair County, in northeastern Alabama, includes an area of 641 square miles in the Tennessee section of the Valley and Ridge physiographic province. A small area in the northwestern part of the county is in the Cumberland Plateau section of the Appalachian Plateaus. Geologic formations that crop out in the county range in age from Early Cambrian to Pennsylvanian and consist chiefly of sandstone, shale, dolomite, and limestone.

Most of the wells and springs yield water from the Conasauga Formation, dolomites of Cambrian and Ordovician age, Floyd Shale, and Pottsville Formation. However, the Ordovician limestones; Fort Payne Chert; Ste. Genevieve Limestone, Gasper Formation, and Hartselle Sandstone undifferentiated; and Bangor Limestone, which have relatively smaller areal extent, yield large quantities of ground water to wells and springs.

The Conasauga generally yields less than 10 gpm (gallons per minute) of water to wells, and as much as 470 gpm to springs. The Cambrian and Ordovician dolomites yield as much as 150 gpm of water to wells, and as much as 2,200 gpm to springs. The Ordovician limestones yield as much as 100 gpm of water to wells, and as much as 400 gpm to springs. The Ste. Genevieve, Gasper, and Hartselle undifferentiated yield as much as 250 gpm of water to wells, and as much as 1,500 gpm to springs. The Bangor yields adequate water to wells for domestic and stock supplies, and as much as 1,500 gpm to springs. The Floyd yields as much as 30 gpm of water to wells. The Pottsville yields as much as 130 gpm but generally less than 50 gpm of water to wells.

Ground water from wells and springs is the source for most domestic, stock, industrial, and public supplies. The estimated daily average ground-water usage from wells and springs in St. Clair County in 1960 was 1,825,000 gallons. Domestic and stock use was about 450,000 gpd (gallons per day), industrial use, 396,000 gpd, public supply was about 967,000 gpd, and rural school use about 12,000 gpd.

The quality of ground water from the principal aquifers in St. Clair County is suitable for many uses; however, the hardness of water from some of the aquifers, the sulfurous odor of water from a few wells that penetrate the Conasauga Formation, and the high iron content of water from the Floyd Shale and Pottsville

Formation may require treatment for some uses. The median hardness of waters from the aquifers ranges from 45 to 200 ppm (parts per million). The iron content of 4 water samples from the Pottsville Formation ranges from 0.59 to 3.4 ppm. The median temperature of ground water from wells and springs in St. Clair County is 61°F.

INTRODUCTION

A continuing study of the ground-water resources of Alabama is being made by the U.S. Geological Survey in cooperation with the Geological Survey of Alabama. An important phase of this program is a series of reconnaissances being made to obtain general information on the geology and the occurrence, availability, and quality of ground water. This report gives the results of one of these investigations. Data in this report should be of particular interest to those responsible for planning the development of ground-water resources. For example, information is given that will aid industries in the preliminary investigation of potential plant sites, municipalities in the development of additional ground-water supplies, and water-well drillers.

Ground water from wells and springs is the source for most domestic, stock, industrial, and public supplies in St. Clair County. Ground water is the principal source of industrial water supply for Avondale Mills at Pell City, Ragland Brick Co. and National Cement Co. at Ragland, and municipal water supply at Acmar, Ashville, Branchville, Margaret, Odenville, Pell City, Pinedale Shores, Ragland, Springville, and Steele. A part of the municipal supply for Leeds in Jefferson County is obtained from spring Z-7 in St. Clair County.

Geologic formations that crop out in St. Clair County range in age from Early Cambrian to Pennsylvanian and consist chiefly of sandstone, shale, dolomite, and limestone. The Conasauga Formation, Cambrian and Ordovician dolomites, Floyd Shale, and Pottsville Formation, which have large areal extents in the county, are the sources of water for most of the wells and springs. However, the Ordovician limestones; Fort Payne Chert; Ste. Genevieve Limestone, Gasper Formation, and Hartselle Sandstone undifferentiated; and Bangor Limestone, which have relatively small areas of outcrop, yield large quantities of ground water to wells and springs

LOCATION AND ECONOMY OF AREA

St. Clair County, in northeastern Alabama, has an area of 641 square miles and in 1960 had a population of 25,388 (fig. 1). The principal municipalities are Ashville, the county seat, Pell City, Ragland, Springville, and Odenville.

The economy of St. Clair County is based on agriculture and industry. The principal crops are corn, cotton, truck crops, and timber. Dairying and cattle farming are of increasing importance to the economy of the area. Avondale Mills at Pell City, Ragland Brick Co. and National Cement Co. at Ragland are the principal industries in the county; however, many residents of St. Clair County commute to work in Calhoun, Etowah, and Jefferson Counties.

PURPOSE AND SCOPE

The purpose of the investigation in St. Clair County was to determine the occurrence, use, and quality of ground water, and to describe the relation of ground water to geology. The objectives of the study were to:

1. Inventory all industrial, municipal, school, and selected domestic wells to determine their location, construction, depth, source of supply, water level, yield, and use (pl. 1, table 3).
2. Inventory selected springs to determine their location, source of supply, discharge, water temperature, and use (pl. 1, table 3).
3. Make periodic measurements of water levels in wells and maintain continuous water-level gages on wells to determine seasonal fluctuations (figs. 5-7).
4. Make periodic measurements of discharge from spring M-8 at Springville to determine seasonal fluctuations (fig. 8).
5. Compile a generalized geologic map of St. Clair County (pl. 2).
6. Determine the thickness, character, and water-bearing properties of the formations (table 2).
7. Make a study of the chemical quality of ground water in St. Clair County (fig. 9 and tables 1 and 3).
8. Obtain generalized data on economic geology.

This investigation was begun in July 1960 by the U.S. Geological Survey in cooperation with the Geological Survey of Alabama. The work was under the direct supervision of W. J. Powell, district geologist in charge of ground-water investigations in Alabama.

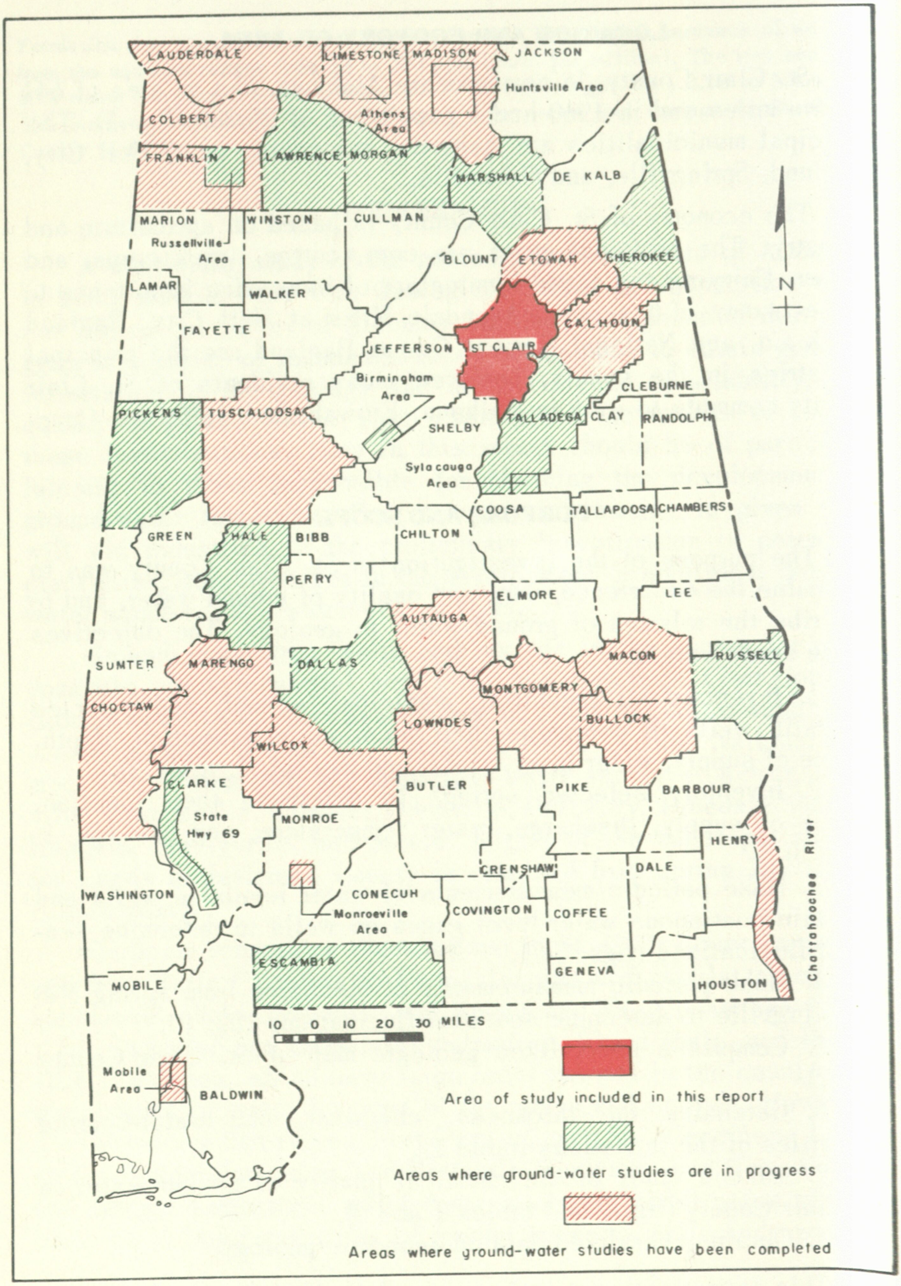

LAUDERDALE
LIMESTONE
MADISON
JACKSON
Huntsville Area
Athens Area
COLBERT
FRANKLIN
LAWRENCE
MORGAN
MARSHALL
DE KALB
MARION
Russellville Area
WINSTON
CULLMAN
BLOUNT
ETOWAH
CHEROKEE
N
LAMAR
WALKER
FAYETTE
ST CLAIR
CALHOUN
JEFFERSON
Birmingham Area
CLEBURNE
PICKENS
TUSCALOOSA
SHELBY
TALLADEGA
CLAY
RANDOLPH
Sylacauga Area
COOSA
TALLAPOOSA
CHAMBERS
GREEN
HALE
BIBB
CHILTON
PERRY
ELMORE
LEE
AUTAUGA
SUMTER
MARENGO
DALLAS
MACON
RUSSELL
CHOCTAW
MONTGOMERY
LOWNDES
BULLOCK
WILCOX
CLARKE
BUTLER
PIKE
BARBOUR
State Hwy 69
MONROE
HENRY
Chattahoochee River
CRENSHAW
DALE
WASHINGTON
CONECUH
Monroeville Area
COVINGTON
COFFEE
ESCAMBIA
GENEVA
HOUSTON
MOBILE
10 0 10 20 30 MILES
Mobile Area
BALDWIN
Area of study included in this report
Areas where ground-water studies are in progress
Areas where ground-water studies have been completed

Figure 1.–Area studied and areas of other ground-water studies in Alabama.

PREVIOUS INVESTIGATIONS

A reconnaissance of ground water in northern Alabama was made by W. D. Johnston in 1928-29. The results of this study were published in 1933 as Alabama Geological Survey Special Report 16, "Ground Water in the Paleozoic Rocks of Northern Alabama," which contains data on 48 wells and 19 springs in St. Clair County.

Reports describing the geology of St. Clair County include four reports of the Alabama Geological Survey–Special Report 9, "The Valley Regions of Alabama, Part II, on the Coosa Valley Region," by Henry McCalley; Special Report 14, "Geology of Alabama," by G. I. Adams, Charles Butts, L. W. Stephenson, and C. Wythe Cooke; Special Report 19, "Iron Ore Outcrops of the Red Mountain Formation in Northeast Alabama," by Ernest F. Burchard and Thomas G. Andrews; and Bulletin 61, "Geology and Coal Resources of the Northeast Part of the Coosa Coal Field, St. Clair County, Alabama," by Howard E. Rothrock–and U.S. Geological Survey Bulletin 1087-E, "Stratigraphy and Uranium Content of the Chattanooga Shale in Northeastern Alabama, Northwestern Georgia, and Eastern Tennessee," by Lynn Glover.

TOPOGRAPHY AND DRAINAGE

St. Clair County lies almost entirely within the Tennessee section of the Valley and Ridge province. A small area in the northwestern part of the county is in the Cumberland Plateau section of the Appalachian Plateaus (U.S. Geol. Survey, 1946).

The topography ranges from rolling to hilly terrain in the southeastern part of the county, to valleys and ridges that trend northeastward in the central and northwestern part. The rolling to hilly terrain is underlain by dolomite and shale; and the valleys are underlain almost entirely by limestone and shale. The ridges are composed chiefly of resistant sandstone and chert. Maximum relief in the county is about 1,000 feet, and the highest points are about 1,500 feet above sea level in the northwestern part of the county.

The county is drained by the Coosa, Cahaba, and Little Cahaba Rivers and their tributaries (pl. 1). The northwestern, northern, and northeastern parts are drained northeastward by Big Canoe and Permeter Creeks and their tributaries; the eastern and southeastern parts are drained eastward and southeastward by Beaver, Shoal, Bridge, Trout, Broken Arrow, Fishing, and Dye Creeks and their tributaries; the southern part is drained southward by Kelly Creek and its tributaries. The creeks listed above are tributaries of the Coosa River. The Coosa River flows southwestward along the southeast edge of the county and forms a common boundary between St. Clair County and Calhoun and Talladega Counties to the east.

The southwestern and western parts of the county are drained southwestward by the Little Cahaba River, Little Black, Big Black, and Black Creeks, tributaries of the Cahaba River. The Cahaba River flows for a short distance through the southwestern part of the county, and the Little Cahaba River heads in the valley northeast of Leeds and flows southwestward and out of the county to the Cahaba River.

CLIMATE

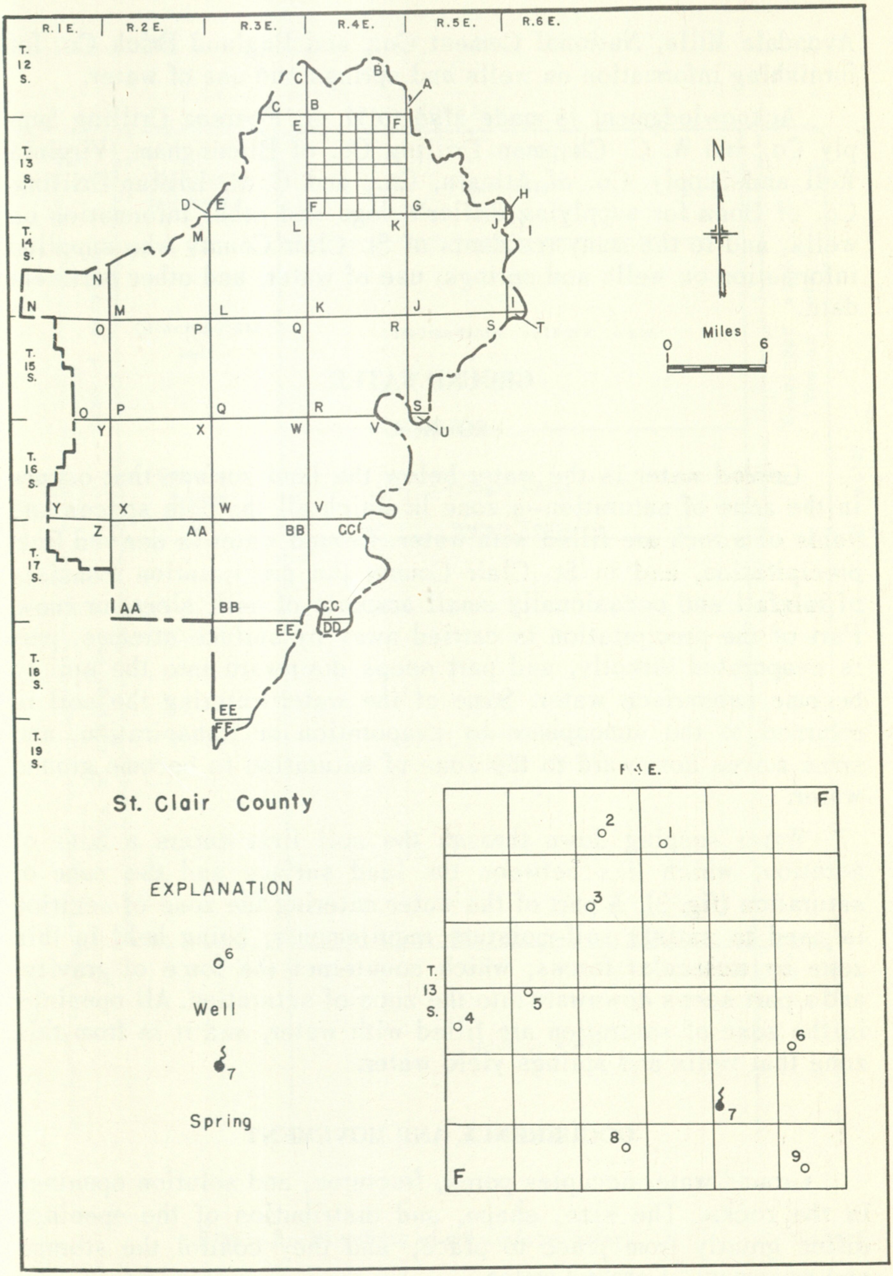
The climate of St. Clair County is mild, characterized by relatively large amounts of rainfall, high humidity (except during autumn), and temperatures that are moderately high during the summer. The average annual precipitation, determined from 41 years of record at the U.S. Weather Bureau station near Ashville, is 55.39 inches. The rainfall is relatively uniform throughout the year; monthly averages exceed 3 inches.

WELL- AND SPRING-NUMBERING SYSTEM

The numbering of wells and springs in St. Clair County is based on the Federal system of land subdivision which divided the public land into townships approximately 36 square miles in area. In the well- and spring-numbering system used in this report, the townships of St. Clair County are designated by letters, in alphabetical order, beginning with "A" in the northeast township. The wells and springs within a township are numbered consecutively, each number being prefixed by the letter identifying the township; for example, F-1, F-2, F-3 (fig. 2).

ACKNOWLEDGMENTS

Acknowledgment is made to the employees of the St. Clair County Board of Education for supplying information on school wells, and to the owners and the officials of the water departments of Acmar, Ashville, Branchville, Leeds, Margaret, Markeeta, Odenville, Pell City, Pinedale Shores, Ragland, Springville, Steele,


R.1E.
R.2E.
R.3E.
R.4E.
R.5E.
R.6E.
T. 12 S.
T. 13 S.
T. 14 S.
T. 15 S.
T. 16 S.
T. 17 S.
T. 18 S.
T. 19 S.
A
B
C
C
B
E
F
D
E
F
G
H
L
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V
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X
W
V
Z
AA
BB
CC
AA
BB
CC
EE
DD
EE
FF
N
Miles
0
6
St. Clair County
EXPLANATION
6
Well
7
Spring
R. 4 E.
F
2
1
3
T. 13 S.
5
4
6
7
8
9
F

Figure 2.–Well- and spring-numbering system used in this report.

Avondale Mills, National Cement Co., and Ragland Brick Co. for furnishing information on wells and springs and use of water.

Acknowledgment is made also to H. W. Peerson Drilling Supply Co. and W. C. Chapman Drilling Co. of Birmingham, Virginia Well and Supply Co. of Atlanta, Ga., and C. R. Killian Drilling Co. of Boaz for supplying driller's logs and other information on wells, and to the many residents of St. Clair County who supplied information on wells and springs, use of water, and other pertinent data.

GROUND WATER

SOURCE

Ground water is the water below the land surface that occurs in the zone of saturation—a zone in which all the pore spaces and voids of a rock are filled with water. Ground water is derived from precipitation, and in St. Clair County the precipitation consists of rainfall and occasionally small amounts of hail, sleet, or snow. Part of the precipitation is carried away by surface streams, part is evaporated directly, and part seeps downward into the soil to become subsurface water. Some of the water entering the soil is returned to the atmosphere by evaporation or transpiration, and some moves downward to the zone of saturation to become ground water.

Water seeping down through the soil first enters a zone of aeration, which lies between the land surface and the zone of saturation (fig. 3). A part of the water entering the zone of aeration is used to satisfy soil-moisture requirements, being held in this zone by molecular forces, which counteract the force of gravity, and a part seeps downward into the zone of saturation. All openings in the zone of saturation are filled with water, and it is from this zone that wells and springs yield water.

OCCURRENCE AND MOVEMENT

Ground water occupies pores, fractures, and solution openings in the rocks. The size, shape, and distribution of the openings differ greatly from place to place, and they control the storage and movement of ground water.

The porosity or percentage of open space in soil and rock determines the amount of water the material will hold. Porosity

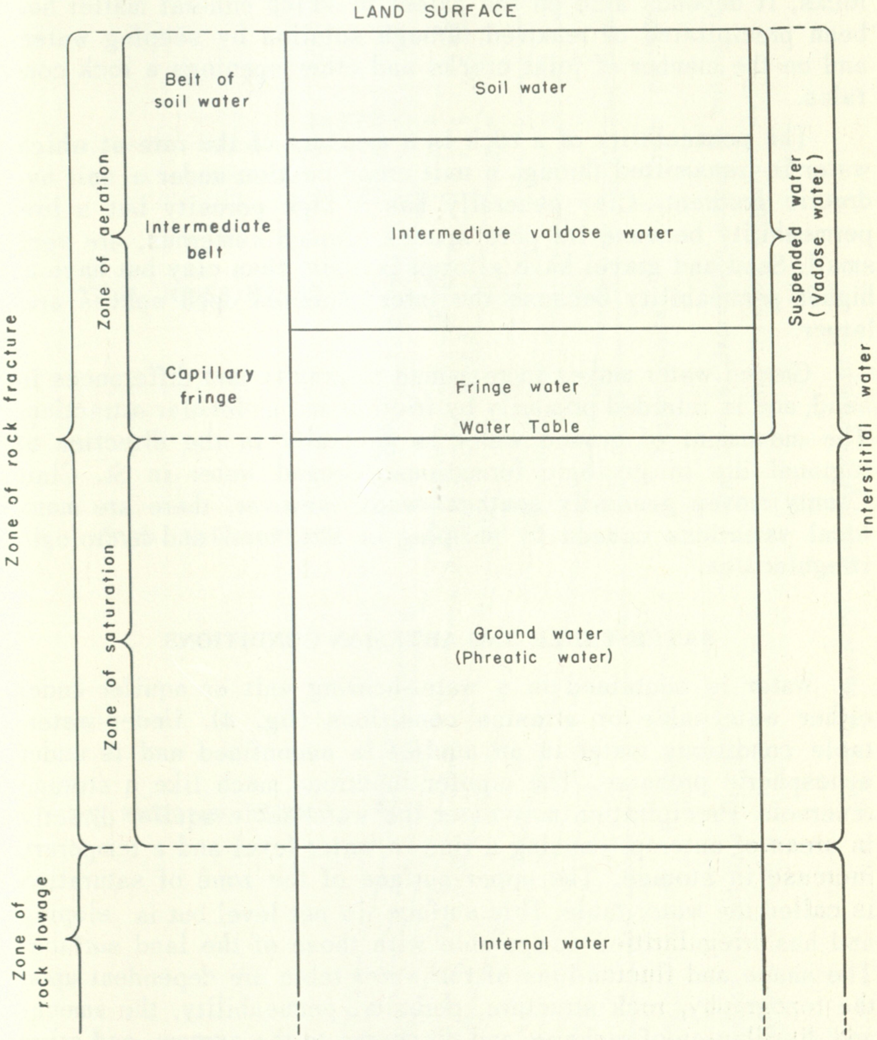

LAND SURFACE
Belt of soil water
Soil water
Zone of aeration
Intermediate belt
Intermediate valdose water
Capillary fringe
Fringe water
Water Table
Suspended water (Vadose water)
Zone of rock fracture
Zone of saturation
Ground water (Phreatic water)
Interstitial water
Zone of rock flowage
Internal water

Figure 3.–Divisions of subsurface water.

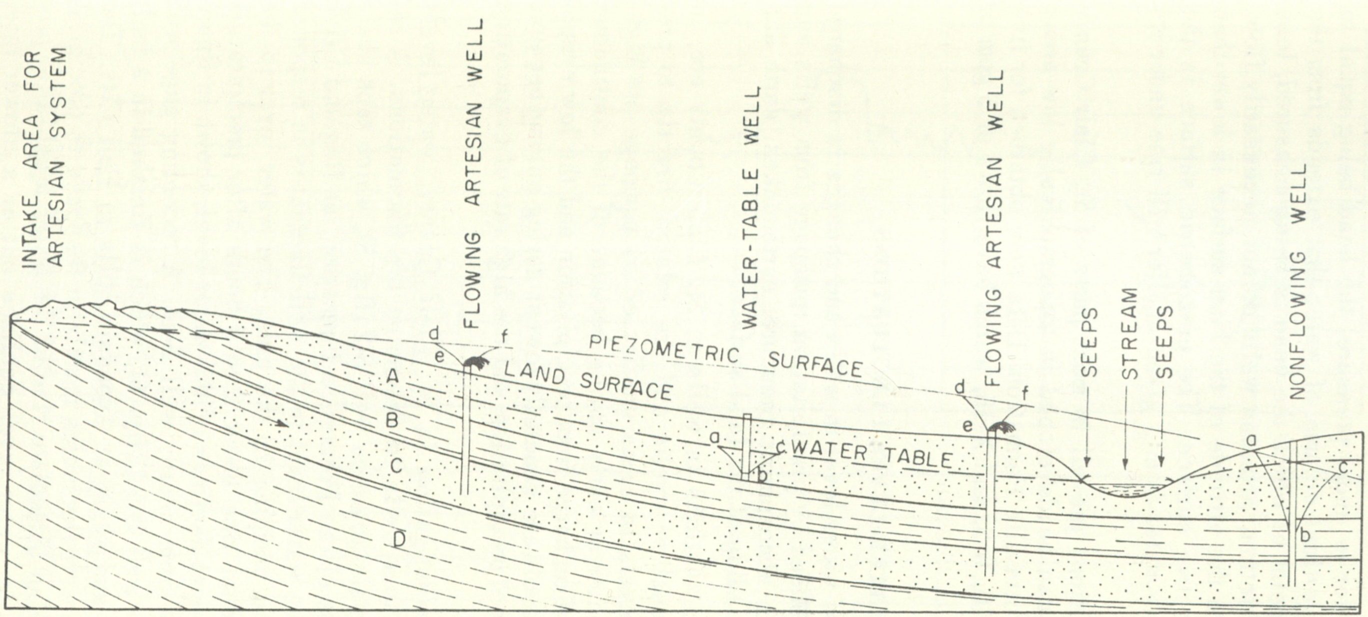
depends upon the shape, arrangement, degree of sorting, cementation, and compaction of particles in a deposit. In consolidated rocks, it depends also on the extent to which mineral matter has been precipitated or removed through solution by seeping water, and on the number of joint cracks and other openings a rock contains.

The permeability of a rock is a measure of the rate at which water is transmitted through a unit cross section under a unit hydraulic gradient. Clay generally has a high porosity but a low permeability because its pore spaces, though numerous, are very small. Sand and gravel have a lower porosity than clay but have a higher permeability because the interconnected open spaces are larger.

Ground water moves in response to gravity and differences in head, and is retarded primarily by friction and molecular attraction. The movement of ground water is generally in the direction of regional dip of geologic formations. Ground water in St. Clair County moves generally southeastward; however, there are many local variations caused by pumping or structural and hydrologic irregularities.

WATER-TABLE AND ARTESIAN CONDITIONS

Water is contained in a water-bearing unit or aquifer under either water-table or artesian conditions (fig. 4). Under water-table conditions water in an aquifer is unconfined and is under atmospheric pressure. The aquifer functions much like a storage reservoir. Precipitation may enter the water-table aquifer directly in areas of outcrop, causing a rise in water level and a temporary increase in storage. The upper surface of the zone of saturation is called the water table. This surface is not level but is sloping and has irregularities comparable with those of the land surface. The shape and fluctuations of the water table are dependent upon the topography, rock structure, porosity, permeability, the amount and distribution of recharge and discharge to the system, and other factors. Water that enters an aquifer in its outcrop area seeps slowly downward to the water table in response to gravity. Within the aquifer, the water may move through inclined beds and become confined above and below by relatively impermeable beds, thus there is a change from water-table to artesian conditions. However, artesian aquifers need not crop out at the land surface, as they may receive recharge by interaquifer movement of water. The water


INTAKE AREA FOR ARTESIAN SYSTEM
FLOWING ARTESIAN WELL
WATER-TABLE WELL
FLOWING ARTESIAN WELL
SEEPS
STREAM
SEEPS
NONFLOWING WELL
PIEZOMETRIC SURFACE
LAND SURFACE
WATER TABLE
A
B
C
D
a
b
c
d
e
f

A. Permeable surficial material B. Upper confining bed C Artesian aquifer D. Lower confining bed

abc Cone of depression caused by pumping a water-table or a nonflowing artesian well.

def Cone of depression caused by natural discharge from flowing artesian well

Figure 4.—Water-table and artesian conditions.

in an artesian aquifer is under pressure, the head being equal to the weight of the vertical column of water that extends from the water table to the point at which the head is being measured, less the losses due to friction. Artesian wells do not necessarily flow; they flow only when the altitude of the land surface is lower than that of the piezometric surface. The piezometric surface is the surface to which the water from a given aquifer will rise under its full head.

Artesian conditions prevail in most parts of St. Clair County and flowing wells can be developed in topographically low areas of outcrop of the Pottsville Formation. Data were obtained for five wells, R-5, S-9, S-10, W-5, and X-18, which have flows of 5 gpm or less (table 3).

WATER-LEVEL FLUCTUATIONS

Fluctuations of water level in wells and changes in discharge from springs are caused by precipitation, pumpage from wells and springs, changes in atmospheric pressure, earthquakes, earth and ocean tides, and loading of the land surface.

Water-level fluctuations in wells in St. Clair County are, in most cases, seasonal or cyclic and are related directly to precipitation. Water levels in areas unaffected by pumpage are highest during late winter or early spring because of the continuous and large amount of recharge from precipitation and the low evaporation rate. Water levels are generally lowest during autumn because of the small amount of precipitation and the high rate of evaporation and transpiration.

During the investigation in St. Clair County, water levels were measured in four wells to determine the fluctuations. A recording gage was maintained on well S-2 (fig. 5), which taps shale and sandstone beds of the Pottsville Formation, at Ragland Brick Co. in Ragland. The water level in the well fluctuates in response to precipitation and pumping in the area. The water level in the well begins a gradual rise about 2 to 4 hours after precipitation occurs. Steep abnormal declines of the water level, shown in figure 5, reflect pumpage from nearby well S-14. A recording gage was also maintained on well BB-2 (fig. 6), which is finished in a fault zone in limestone and shale at Avondale Mills in Pell City. The water level in this well fluctuates mainly in response to precipitation, which causes an immediate rise of the water level—after precipitation ceases the water level declines but at a slower rate.

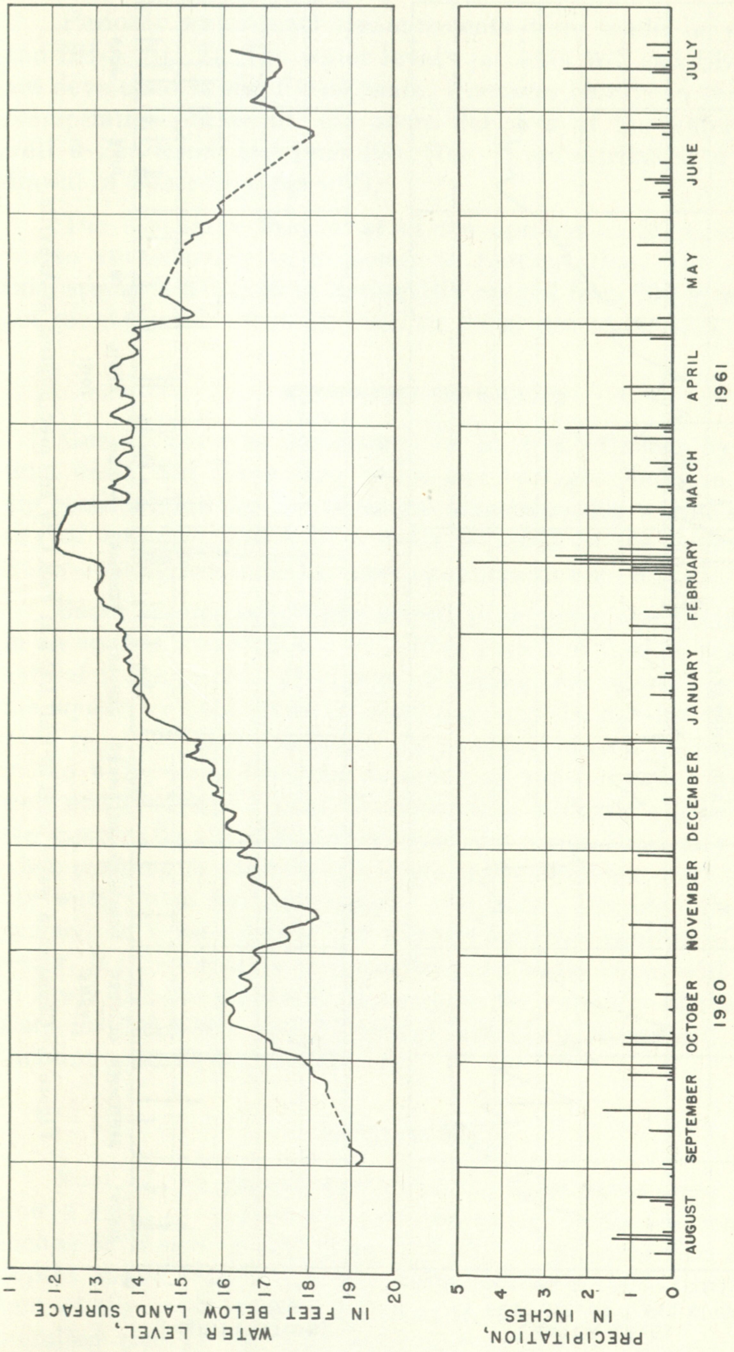


Figure 5.–Changes in water level in well S-2 at Ragland and precipitation at Ashville.

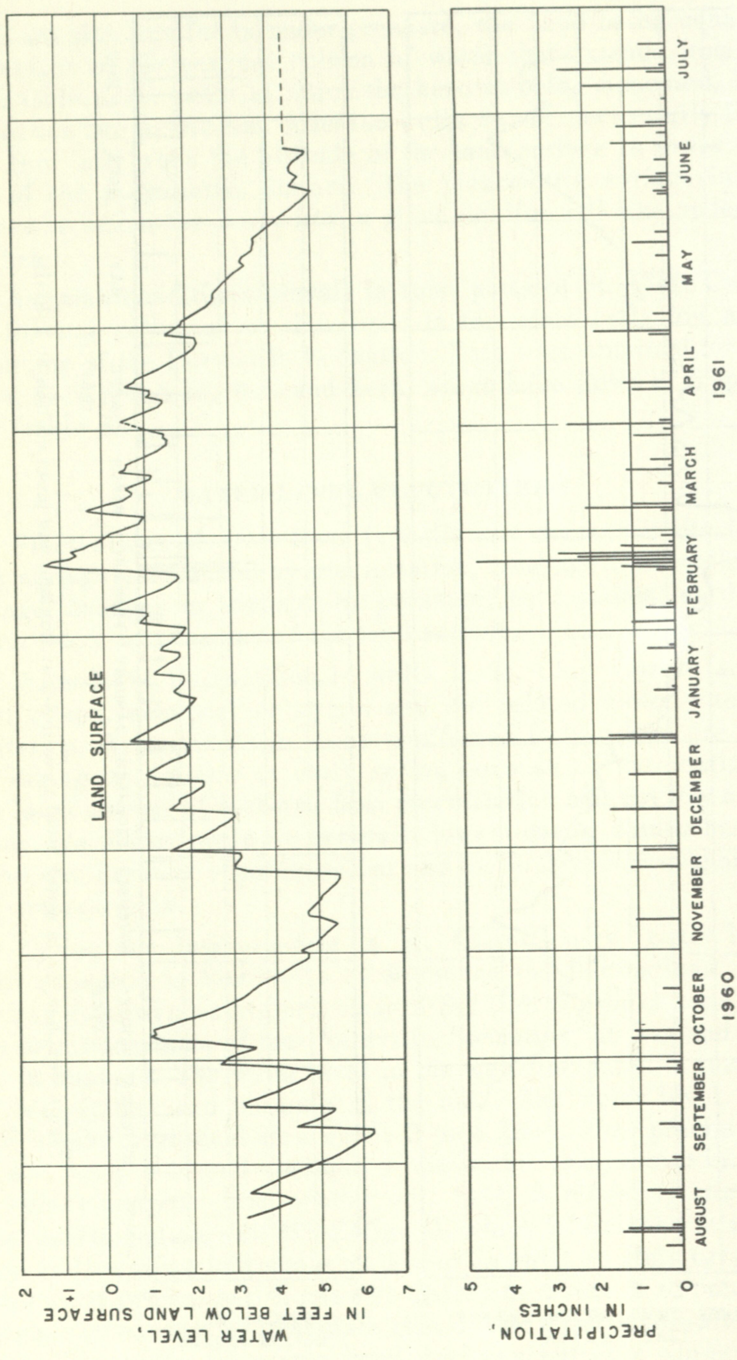


Figure 6.—Changes in water level in well BB-2 at Pell City and precipitation at Ashville.

Periodic water-level measurements were made in wells W-2 and BB-3 (fig. 7). The water levels in wells W-2 and BB-3, which are developed in the Floyd Shale, fluctuate chiefly in response to precipitation. However, the sharp declines of the water level in well W-2 in March and June 1961 (fig. 7) are attributed to the withdrawal of water from the well.

The discharge from most of the springs in St. Clair County varies considerably in response to precipitation. The discharge from spring M-8 (fig. 8) at Springville ranged from 900 gpm (gallons per minute) on October 26, 1960 to 2,200 gpm on April 5, 1961.

RECOVERY OF WATER

Ground water is discharged in St. Clair County by pumping from wells and flows from wells and springs. Wells in the area are commonly drilled but there are also many dug wells. The quantity of water available from wells depends on the penetration of water-bearing fractures or other openings in the bedrock.

Under natural conditions a state of dynamic equilibrium exists in an aquifer, developed over a long period of time in response to natural recharge and discharge. Pumping from a well penetrating the aquifer creates artificial discharge and the aquifer must adjust as a result of this condition. As pumping lowers the water level in the well, water from the surrounding aquifer moves toward the well and produces a cone of depression with the pumped well at the center (fig. 4). The lowering of the water level may be rapid when pumping is started, but it gradually declines until the pumping water level becomes nearly stationary, provided the well is pumped at a rate within the capacity of the aquifer to transmit water. If this capacity is exceeded, the water level will continue to lower and the yield will decrease to the capacity of the aquifer. Data for 248 wells and 25 springs are given in table 3 and their locations are shown on plate 1.

DRILLED WELLS

Most of the ground-water data in this report were obtained from a study of 197 selected drilled wells. Wells are commonly 6 inches in diameter but range from 2½ to 10 inches in diameter. Depths range from 25 to 875 feet; however, only about 15 percent of the wells exceed 200 feet in depth. Casing is commonly installed through the soil zone and seated in bedrock, and the

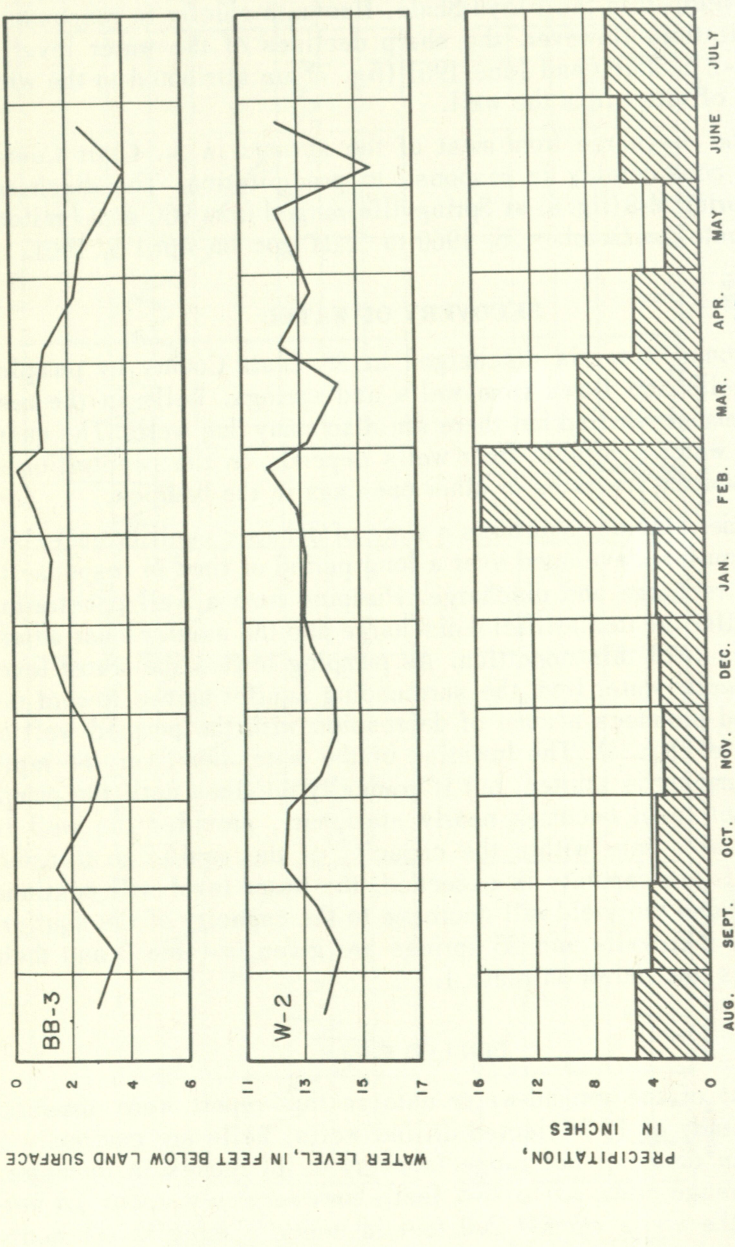


Figure 7.—Changes in water level in wells W-2 and BB-3 and precipitation at Ashville.

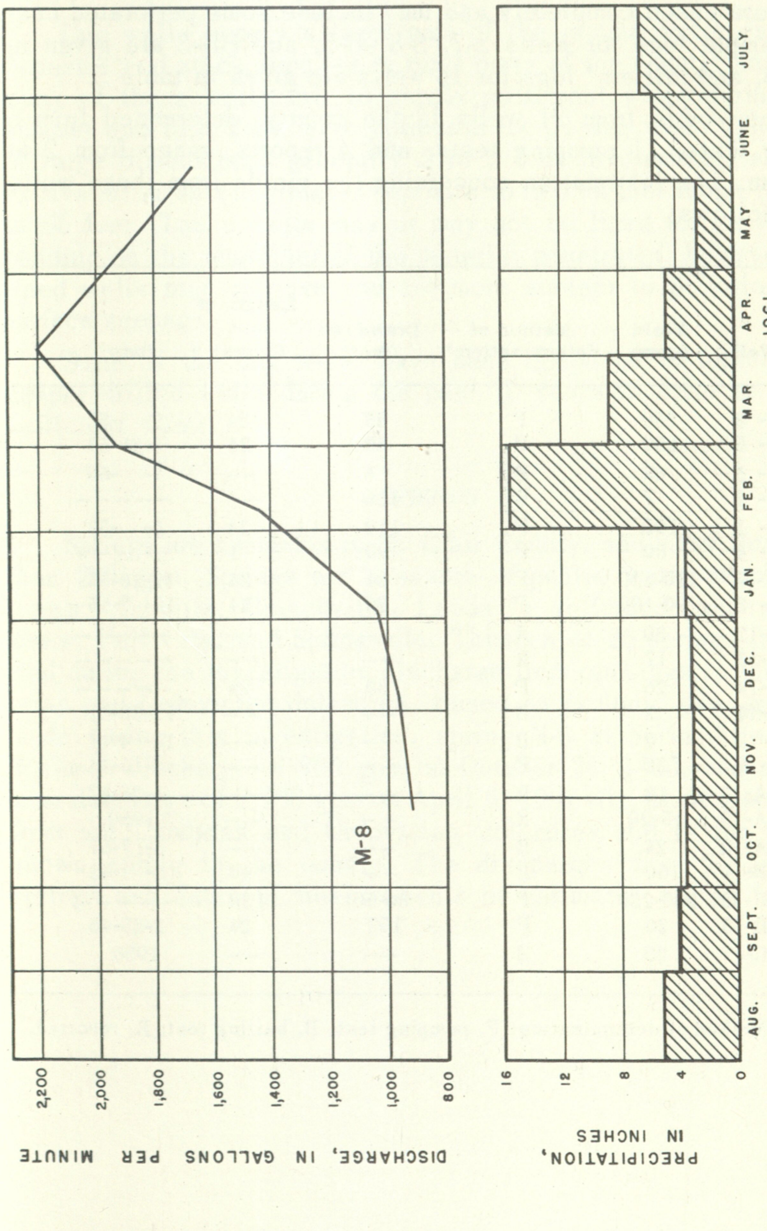


Figure 8.–Changes in discharge from spring M-8 at Springville and precipitation at Ashville.

lower part of the well is left open. Some wells drilled in fractured zones are cased completely and may include some perforated casing. Sample logs for wells S-7, S-8, R-5, and BB-3 are given in table 4, and drillers' logs for 18 wells are given in table 5.

The yields from 21 wells in the county, determined from 6 bailing tests, 11 pumping tests, and 4 reports, range from 2 to 250 gpm. The information concerning the yields from these wells is as follows:

Well	Yield (gpm)	Method of determination [1]	Drawdown (feet)	Length of test (hours)	Date
B- 3	250	P	83	24	9- -57
B- 5	150	P	60	24	3-26-54
C- 5	65	B	4	--	7- -60
S- 2	7	B	160	--	-----
S- 3	100	P	110	24	6- -53
S- 4	80	P	90	1	-----
S- 7	110-130	P	84	24	12-28-55
S- 8	90-100	P	80	24	12- 7-55
S-12	30	R	--	--	-----
S-13	17	R	--	--	-----
S-14	26	P	130	24	-----
W-14	2	B	--	--	12-30-41
W-15	2	B	--	--	12- 4-41
W-16	30	P	--	--	3-16-44
AA- 7	18	R	--	--	5-26-47
AA- 9	15-20	R	--	--	1960
AA-10	24	B	--	--	3-17-57
BB- 1	150	P	--	48	3- -42
BB- 2	200-250	P	30-40	120	-----
BB- 3	26	P	157	24	2-25-46
CC- 7	20	B	--	--	1956

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[1] Method of determination: P, pumping test; B, bailing test; R, reported.

DUG WELLS

Dug wells supply a large part of the ground water used for domestic and stock supplies in rural parts of the county; however, many of these wells fail to supply sufficient water during late summer and fall. Data were collected for 51 dug wells. They are of large dimensions, generally 2 to 3 feet in diameter, and are excavated in unconsolidated deposits to depths that range from 11 to 50 feet. These wells may or may not be lined (or cased) depending on the character of the material penetrated; however, unlined wells tend to cave and are more subject to pollution from surface seepage.

Some of the dug wells have been deepened or replaced by deeper drilled wells during the past 10 years in order to obtain sufficient water.

SPRINGS

Springs are numerous in St. Clair County, and many flow more than 200 gpm. Springs are a source of public water supplies at Acmar, Ashville, Branchville, Leeds in Jefferson County, Markeeta, Pell City, and Springville. Thirteen of 25 springs inventoried during the investigation discharge from openings in the Cambrian and Ordovician dolomites. Based on periodic measurements made during this investigation, spring M-8 at Springville had a minimum discharge of 900 gpm on October 26, 1960, and a maximum discharge of 2,200 gpm on April 5, 1961 (fig. 8). It discharges from the Cambrian and Ordovician dolomites and is the largest known spring in the county. The discharges from 25 selected springs and dates of measurements or estimates are as follows:

Spring	Discharge (gpm)	Method of determination [1]	Date
E- 5	1,500	M	6- 8-61
E- 8	230	M	6- 8-61
F- 7	75	E	10-27-60
J- 9	630	M	6- 8-61
J -11	1,500	M	6- 8-61
K- 1	470	M	6- 8-61
K- 3	670	M	6- 8-61
L- 9	25	E	11-22-60
M- 1	50	E	9-14-60
M- 6	80	M	6- 8-61
M- 8	1,670	M	6- 7-61
M-10	690	M	6- 8-61
N- 1	50	E	12- 6-60
O- 1	700	M	6- 7-61
P- 1	10	E	11-15-60
P- 2	240	M	6- 8-61
V- 2	60	M	6- 8-61
V- 9	200-400	R	. . . .
W- 8	125-250	R	. . . .
X- 2	80	M	6- 7-61
Y- 5	20-60	R	. . . .
Z- 3	8-20	R	. . . .
Z- 7	400	E	6- 7-61
BB- 6	300	E	8-16-60
BB-12	800	E	8-16-60

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[1] Method of determination: M, measured; E, estimated; R, reported.

USE OF WATER

Ground water from wells and springs is the source of most domestic, stock, industrial, and public supplies in St. Clair County. In most parts of the county ground-water supplies are adequate for present needs; however, demands for water at Acmar, Markeeta, and Pinedale Shores exceed the quantities available during the dry season. The estimated average use of ground water in St. Clair County in 1960, in gallons per day, is as follows:

Domestic and stock supplies	450,000
Subtotal	450,000
Industrial supplies	
Avondale Mills	250,000
National Cement Co.	90,000
Ragland Brick Co.	6,000
Others	50,000
Subtotal	396,000
Public supplies	
Acmar	22,000
Ashville	100,000
Branchville	6,000
*Leeds (Jefferson County)	320,000
Margaret	25,000
Markeeta	8,000
Odenville	22,000
Pell City	275,000
Pinedale Shores	6,000
Ragland	81,000
Springville	65,000
Steele	27,000
Others	10,000
Subtotal	967,000
Rural school supplies	
Chandler Mountain	1,700
Coal City	2,000
Greenfield	1,500
Moody	6,500
Riverside	300
Subtotal	12,000
Total	1,825,000

* Partial supply from spring in St. Clair County. Additional supply from wells in Jefferson County.

The National Cement Co. at Ragland is the only known industrial consumer of water from streams in St. Clair County. Their daily use of surface water during 1960 was about 470,000 gallons.

QUALITY OF WATER

All natural waters contain dissolved mineral matter. Precipitation, even before it reaches the ground, dissolves small quantities of gases from the atmosphere. After reaching the ground, it begins to dissolve minerals from the soil and rocks. The amount and kind of minerals dissolved in ground water may vary greatly from place to place, depending primarily on the types of minerals in the soil and rocks over or through which the water moves, the presence of carbon dioxide or oxygen, the temperature of the water, and the length of time the water has been in contact with the rock. The most common mineral constituents in ground water are silica, aluminum, iron, manganese, calcium, magnesium, sodium, potassium, bicarbonate, carbonate, sulfate, chloride, fluoride, and nitrate (table 1).

Drinking water standards have been established by the U.S. Public Health Service (1962) for interstate carriers; these or similar standards, have been adopted by many states. Water conforming to these standards is suitable for many uses. The following discussion, which is not inclusive, summarizes briefly the chemical properties and mineral constituents of water that are usually considered in selecting a supply for drinking water.

Iron or manganese in water, even in small quantities, is objectionable because they stain plumbing fixtures and laundry yellowish brown to reddish brown or black. A concentration of more than 0.3 ppm (part per million) of iron or 0.05 ppm of manganese is considered excessive in drinking water or public water supplies.

Magnesium contributes to the hardness of a water and salts of magnesium in excessive quantities will have a laxative effect on persons not accustomed to drinking the water. Magnesium should not exceed 125 ppm.

Sulfate should not exceed 250 ppm. Salts of sulfate are a laxative and a quantity equal to that in 1 liter of water containing 1,000 to 2,000 ppm sulfate constitutes an average dose (Rainwater and Thatcher, 1960, p. 279).

Chloride in large concentrations makes the water unfit for many uses. Chloride should not exceed 250 ppm.

Fluoride is a minor constituent of ground water; however, it may cause mottling of children's teeth. According to U.S. Public Health Service standards (1962), supplies should not contain more than 0.8 to 1.7 ppm of fluoride depending on the annual average of maximum daily air temperatures.

Nitrate in water has considerable significance as an indication of pollution and it may be a contributing factor to a condition in babies known as methemoglobinemia (Maxcy, 1950, p. 265). The U.S. Public Health Service standard (1962) lists 45 ppm as the maximum concentration that should be present in a water supply.

Hardness is a property of water attributable chiefly to alkaline earths, principally calcium and magnesium. Hardness is an indication of the soap-consuming capacity of the water and, indirectly, an indicator of the scale-forming tendency of the water when used in boilers. Water having a hardness less than 61 ppm, is soft; 61 to 120 ppm, is moderately hard; 121 to 180 ppm, is hard; and in excess of 181 ppm, is very hard.

Specific conductance is the ability of a solution to conduct an electric current, and is a general indication of the amount of mineral matter dissolved in a water. The dissolved solids, in parts per million, in natural waters of moderate mineral content may be computed approximately by multiplying the specific conductance by 0.6. Dissolved solids should not exceed 500 ppm.

The pH is a measure of the water's acidity or alkalinity. Theoretically, a neutral water has a pH of 7.0. Progressive values on the pH scale below 7.0 denote increasing acidity and progressive values above 7.0 denote increasing alkalinity.

CHEMICAL ANALYSES

The hardness and chloride concentration of water were determined by field chemical analyses for 221 samples from wells and springs in St. Clair County (table 3). Chemical analyses were made of water from 10 wells and springs by the U.S. Geological Survey, Quality of Water Branch Laboratory at Ocala, Fla., and analyses by private laboratories were available of water from 5 wells (table 1). Field analyses are only approximations and may have some error; however, they are useful in a general comparison of hardness and chloride content of water from different geologic formations. Any apparent discrepancies in values of hardness and chloride between table 1 and table 3 are due in part to seasonal changes in the quality of the water caused by changes in groundwater recharge and to differences in laboratory and field techniques. The information obtained from the chemical analyses indicates:

1. The quality of ground water from the principal aquifers in St. Clair County is suitable for many uses; however, because of the hardness and the high iron content of water from some of the aquifers, treatment may be required for some uses. A sulfurous odor is reported from some waters from the Conasauga Formation.

2. The iron content of water from 15 wells and springs ranges from 0.02 to 3.4 ppm (table 1). Water from the Pottsville Formation generally has iron in excessive amounts. In some parts of the county, the Hartselle Sandstone yields water that contains objectionable amounts of iron, an example is water from well B-3 which contains 1.8 ppm of iron.

3. The chloride content of water from wells and springs in St. Clair County is relatively low (tables 1 and 3). The median chloride content of water from each of the aquifers is 7 ppm or less (fig. 9). The maximum chloride concentration of 131 ppm in water from well V-1, which is finished in the Floyd Shale, is considerably less than the limit recommended by the U.S. Public Health Service (1962).

4. The fluoride content of water from 12 wells and springs is low. It ranges from a trace in water from wells S-7 and S-8 to 0.5 ppm in water from well C-3 (table 1).

5. The hardness of water from wells and springs sampled ranges from 10 ppm in water from the Pottsville Formation to 2,870 ppm in water from the Floyd Shale (tables 1 and 3). The median hardness of water from the aquifers ranges from 45 ppm in the Ste. Genevieve Limestone, Gasper Formation, and Hartselle Sandstone undifferentiated, to 200 ppm in the Conasauga Formation (fig. 9).

6. The magnesium and nitrate contents reported in table 1 are less than the recommended limits of the U.S. Public Health Service (1962). The concentration of sulfate and dissolved solids exceeds the recommended limits in well C-3.

Table 1.–*Chemical analyses of water from selected wells and springs in St. Clair County, Ala.*

Well or spring: Numbers correspond with those in plate 1 and table 3.

Water-bearing formation: €c, Conasauga Formation; O€u, Ketona(?), Copper Ridge, and Chepultepec Dolomites undifferentiated; Olm, Mosheim, Lenoir, and Little Oak Limestones; Srm, Red Mountain Formation; Mfm, Maury Formation and Fort Payne Chert; Mtm, Maury Formation, Fort Payne Chert, and Tuscumbia Limestone; Mhs, Ste. Genevieve Limestone, Gasper Formation, and Hartselle Sandstone; Mf, Floyd Shale; IPpv, Pottsville Formation.

Well or spring	Date of collection	Water-bearing formation	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Hardness as $CaCO_3$		Specific conductance in micromhos at 25°C	pH	Temperature (°F)
																	Calcium, magnesium	Non-carbonate			
			Parts per million																		
[1] B- 3	10-29-57	Mhs	21.2	0.4	1.8	.....	41.8	2.5	....	...	54.5	0.0	2.8	3.6	.....	.....	[2] 120.7	.....	.....	7.6	..
C- 3	2- 8-61	Mtm, Srm	....	...	2.0	.....	248	24	69	...	218	0	656	2.0	0.5	1.0	718	539	1,450	7.8	..
K- 3	2- 8-61	O€u	....	...	.03	.....	41	12	2.5	...	172	0	2.4	3.0	.1	7.5	152	11	295	7.9	60
K-12	2- 8-61	€c	....	...	.15	.....	95	17	8.5	...	348	0	10	13	.1	9.5	307	22	574	7.7	..
M- 8	2- 8-61	O€u	....	...	.02	.....	30	13	1.2	...	150	0	2.0	1.0	.1	.2	128	6	238	7.5	59
O- 1	2- 8-61	O€u	....	...	.04	.....	31	11	.9	...	144	0	2.4	.0	.1	1.3	122	4	232	7.9	59
R- 5	2- 8-61	IPpv	....	...	.59	.....	30	10	22	...	194	0	1.6	1.0	.2	.1	116	0	297	7.8	..
[1] S- 3	6-27-53	IPpv	34.5	...	3.4	.....	16.7	11.4	16.9	...	56.5	0	25.9	13.3	.....	.....	[2] 98.5	.....	.....	6.6	..
[3] S- 7	12-29-55	IPpv	18.1	1.2	.6	Trace	2.9	1.1	103.6	0.9	285.2	0	4.3	9.1	Trace	2.0	[2] 19.4	11.7	.....	8.1	..
[3] S- 8	12- 9-55	IPpv	12.6	2.0	2.1	Trace	3.9	3.5	87.9	1.2	240.4	10.5	6.1	7.0	Trace	1.1	[2] 39.0	24.1	.....	8.3	..
V- 7	2- 8-61	O€u	....	...	.04	.....	21	12	.6	...	122	0	.8	.5	.1	.0	102	2	194	7.6	..
W- 2	2- 8-61	Mf	....	...	.30	.....	56	18	15	...	246	0	7.6	21	.3	.1	214	12	450	8.0	61
W- 8	2- 8-61	Mfm	....	...	.05	.....	48	2.9	1.2	...	152	0	4.0	1.0	.1	.2	132	8	248	7.9	59
X- 7	2- 8-61	Olm	....	...	.03	.....	59	5.1	1.4	...	196	0	5.6	2.0	.1	.3	168	8	318	7.8	56
[3] BB- 3	3- 2-46	Mf	14.2	1.1	.2	0.1	35.5	14.6	36.6	2.7	241.0	7.5	17.3	7.2	.....	Trace	155.2	148.7	.....	8.4	..

[1] Southern Testing Laboratories, Inc., Birmingham, Ala.

[2] Total hardness.

[3] The Picard Testing Laboratories, Birmingham, Ala.

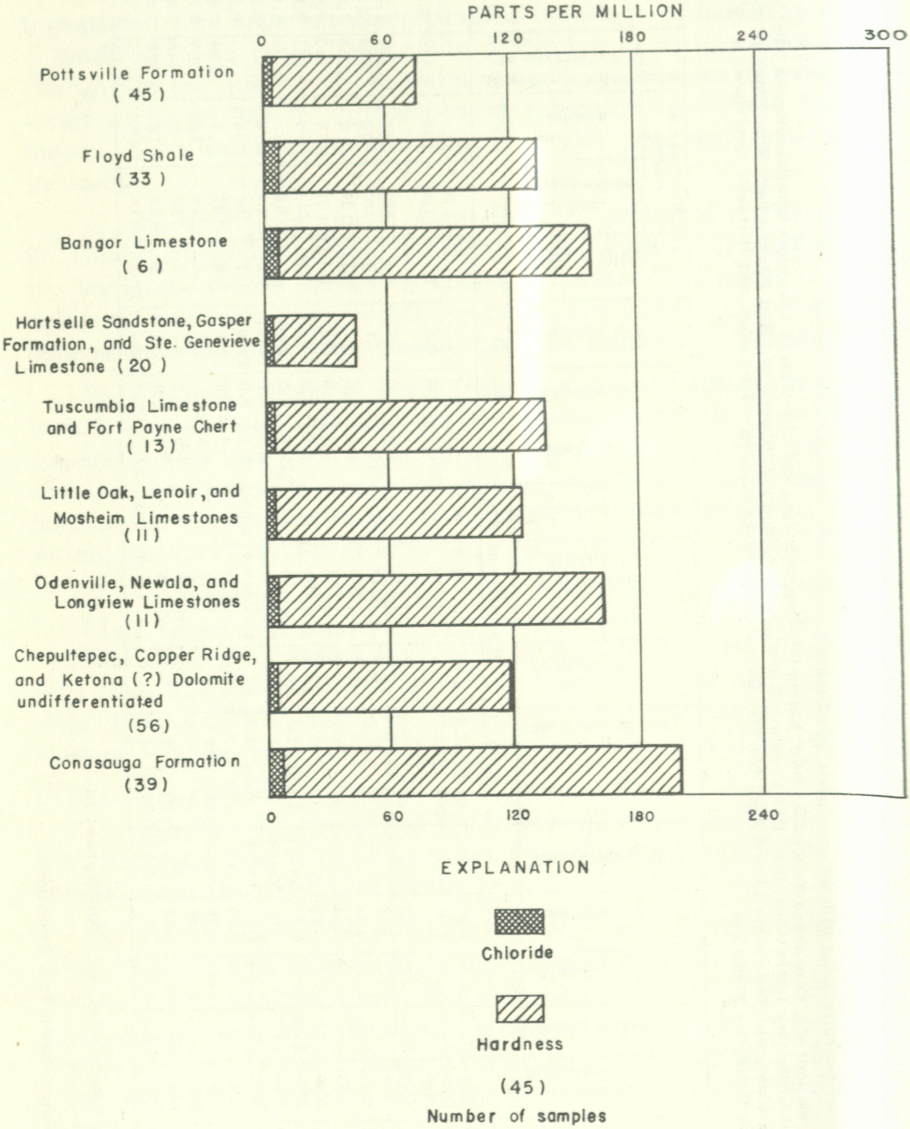

Figure 9.–Median hardness and chloride content of water from wells and springs in St. Clair County.

7. The median temperature of ground water in St. Clair County is 61 °F (tables 1 and 3).

GEOLOGY

The generalized geologic map of St. Clair County (pl. 2) was modified from the geologic map of Alabama (Adams and others, 1926), the geologic map and sections of Greasy Cove, Ala. (Burchard and Andrews, 1947, pl. 2), and the geologic map of a part of the Coosa coal field and adjacent areas, St. Clair County, Ala. (Rothrock, 1949), by reconnaissance geologic mapping done on U.S. Geological Survey topographic quadrangles.

The consolidated rocks that crop out in St. Clair County range in age from Early Cambrian to Pennsylvanian. The rocks have been gently folded into northeastward-trending anticlines and synclines complicated by thrust faults. The complete Ordovician section is not present everywhere, as the Cahaba Barrier, described by Butts (Adams and others, 1926, p. 118 and pl. 27), extends from southwest to northeast across the center of the county. The Chickamauga Limestone is the only formation of Ordovician age present northwest of the barrier. A more complete section of the Ordovician occurs southeast of the barrier. The Cahaba fault (pl. 2), which probably has a displacement of several thousand feet, is in the approximate position of the Cahaba Barrier. The fault has brought the Rome Formation of Early Cambrian Age in contact with the Pottsville Formation of Pennsylvanian age.

The unconsolidated deposits of clay, sand, and gravel adjacent to the Coosa River are not mapped.

GEOLOGIC FORMATIONS AND THEIR WATER-BEARING PROPERTIES

A generalized section of the geologic formations in St. Clair County and their water-bearing properties is given in table 2.

CAMBRIAN SYSTEM

ROME FORMATION

The Rome Formation of Early Cambrian Age consists of red and green shale interbedded with green to tan thin-bedded sandstone. It crops out in a narrow band which extends from the county line 2 miles north of Greensport southwestward to about 2 miles

Table 2.—*Generalized section of the geologic formations in St. Clair County and their water-bearing properties*

System	Geologic map symbol	Stratigraphic unit	Thickness (feet)	Rock character	Water-bearing properties
Pennsylvanian	IPpv	Pottsville Formation	600-1,300+	Sandstone, tan to gray, thin- to thick-bedded; tan to dark-gray shale; and many coal beds.	In places, wells yield as much as 130 gpm but generally less than 50 gpm. Supplies water to flowing wells (pl. 1). Water is generally high in iron content. The median hardness of water is 74 ppm (fig. 9).
Mississippian	Mpp	Parkwood Formation	400-700	Sandstone, light-gray to white, fine-grained, thin- to medium-bedded, and well cemented.	Yields water to one drilled well (E-3). Supply is short during dry season.
		Pennington Formation	0-25	Shale, red and tan.	
	Mf	Floyd Shale	15-2,000	Shale, gray to black, light-brown, and dull green; fine-grained thin-bedded sandstone; siltstone and thin ferruginous beds.	Yields water to domestic wells. Supplies from dug wells usually are adequate during the dry season. The median hardness of water is 134 ppm (fig. 9).
	Mb	Bangor Limestone	400-500	Limestone, gray to dark blue-gray, medium- to thick-bedded, crystalline, fossiliferous, and nodules of dark-gray chert.	Yields adequate water to wells for domestic use, and as much as 1,500 gpm to springs. The median hardness of water is 158 ppm (fig. 9).
	Mhs	Hartselle Sandstone	200	Siltstone, weathers brown in the lower part; and light-gray fine-grained thin- to medium-bedded laminated sandstone in the upper part.	Yields as much as 250 gpm to wells, and as much as 1,500 gpm to springs. The median hardness of water is 45 ppm (fig. 9).
		Gasper Formation	50-200	Shale, dark-gray to black or dark-brown, and many ferruginous lenses and thin ferruginous beds.	
		Ste. Genevieve Limestone	?	Limestone, gray to blue, medium- to thick-bedded, dense to coarsely crystalline, and fossiliferous and interbedded gray shale.	
	Mtm	Tuscumbia Limestone	15-25	Limestone, gray, and chert.	Yields adequate water to wells for domestic use. Source for springs that yield as much as 400 gpm. The median hardness of water is 136 ppm (fig. 9).
	Mfm	Fort Payne Chert	120	Limestone, light-gray or white, thin- to medium-bedded, siliceous, and nodules of light-gray to dark-gray chert.	
		Maury Formation	2-5	Claystone, green, red, and gray, glauconitic, pyritiferous, and phosphate nodules.	Relatively impermeable, and not an aquifer.

Devonian	Dc	Chattanooga Shale	6-35	Shale, gray to black, organic, pyritiferous, marine, and sparsely fossiliferous.	Relatively impermeable, and not an aquifer.
	Dfm	Frog Mountain Sandstone	20-50	Sandstone, tan, gray, or gray with red stain, thin- to medium-bedded, and sandy shale.	No wells or springs are known to yield water from this formation.
Silurian	Srn	Red Mountain Formation	50-500	Shale, brown, red, and green, includes ferruginous beds in the lower half and brown fine-grained thin- to thick-bedded sandstone in the upper half of the formation. The formation becomes thinner southeastward in the county.	Yields adequate water to wells for domestic use that is often of poor quality.
Ordovician	Oc	Chickamauga Limestone	200-650	Shale, red and (or) green; red coarse-grained sandstone; and gray thin- to thick-bedded limestone. In the northern part of the county, the basal part contains a layer of conglomerate containing chert gravel.	No wells or springs are known to yield water from this formation.
	Olm	Little Oak Limestone	50-500	Limestone, dark-gray, thick-bedded, coarsely crystalline.	Wells and springs yield from 2 to 400 gpm that is used for domestic, stock, industrial, and public supplies. The median hardness of water is 124 ppm (fig. 9).
		Lenoir Limestone	500	Limestone, dark-gray, medium thick-bedded, finely crystalline.	
		Mosheim Limestone	50±	Limestone, blue-gray, thick-bedded, compact, and brittle.	
	Ool	Odenville Limestone	50±	Limestone, dark-gray, fine-grained, siliceous, cherty, impure, and argillaceous.	Yields adequate water to wells for domestic use and will probably yield large quantities to wells that penetrate fractures and solution openings. The median hardness of water is 164 ppm (fig. 9).
		Newala Limestone	?	Limestone, dark- to pearl-gray, thick-bedded and very little dolomite.	
		Longview Limestone	?	Limestone and dolomite, light-gray, thick-bedded, cherty.	
Ordovician and Cambrian	O€u	Chepultepec, Copper Ridge, and Ketona(?) Dolomites	?	Dolomite, light- to dark-gray, medium- to thick-bedded; weathers to a cherty clayey subsoil.	Source of water for many wells and springs. Wells yield as much as 150 gpm and springs as much as 2,200 gpm. The median hardness of water is 119 ppm (fig. 9).
Cambrian	€c	Conasauga Formation	1,000±	Shale, gray and dark-green interbedded with thin layers of gray limestone and dolomite.	Most drilled wells yield sufficient water for domestic use that is commonly of poor quality. Wells generally produce little additional water below 200 feet in depth. The median hardness of water is 200 ppm (fig. 9).
	€r	Rome Formation	?	Shale, red and green interbedded with green to tan thin-bedded sandstone.	No wells or springs are known to yield water from this formation.

north of Leeds (pl. 2). The Rome is exposed in a road cut along county road 20 about 2 miles northwest of Greensport. No wells or springs in St. Clair County are known to yield water from the Rome Formation.

CONASAUGA FORMATION

The Conasauga Formation of Middle and Late Cambrian Age overlies the Rome Formation and consists of about 1,000 feet of gray and dark-green shale interbedded with thin layers of gray limestone and dolomite. It crops out in the northeastern part of the county in two broad bands (pl. 2). The soils formed on the Conasauga Formation are generally clayey and poorly drained, and the topography is flat to gently rolling. Dug wells penetrating the subsoil generally have small yields and some become dry in late summer or fall. Most drilled wells that penetrate layers of limestone and dolomite yield sufficient water for domestic supplies. Most of the water developed in the Conasauga Formation occurs at a depth of less than 200 feet. Five drilled wells at Pinedale Shores fail to supply sufficient water during the summer. The wells yield from about 5 to 30 gpm. Springs K-1 and P-2 flow from openings in the Conasauga and discharged 470 and 240 gpm on June 8, 1961; these large flows probably are due to local structure. Wells L-4, L-10, L-19, M-5, and spring P-1 yield water that has a sulfurous odor. The hardness of water from the Conasauga Formation ranges from 20 to 598 ppm and has a median of 200 ppm, determined from 39 analyses (fig. 9).

CAMBRIAN AND ORDOVICIAN SYSTEMS

KETONA(?), COPPER RIDGE, AND CHEPULTEPEC DOLOMITES UNDIFFERENTIATED

The Cambrian and Ordovician dolomites, which overlie the Conasauga Formation in St. Clair County, include the Ketona(?), Copper Ridge, and Chepultepec Dolomites. They consist of light- to dark-gray medium- to thick-bedded dolomite, which weathers to a cherty clayey subsoil. The water-bearing properties and lithologies of the dolomites are similar, and are undifferentiated in this report. The Cambrian and Ordovician dolomites crop out in several northeastward-trending bands in the northwestern half of the county and in a broad area adjacent to the Coosa River in the southeastern part. The Pell City fault, southeast of Pell City, has a maximum displacement of 2,500 feet (McCalley, 1897, pt. 2, p. 32) and rocks of Cambrian and Ordovician age are in contact with the Floyd Shale of Mississippian age (pl. 2). The dolomites contain chert which is abundant in the residuum overlying bedrock.

Thirteen of 25 springs and many of the wells inventoried during the investigation yield water from openings in the dolomites. Springs flowing from the dolomites are F-7, K-3, L-9, M-6, M-8, M-10, N-1, O-1, X-2, Y-5, Z-3, BB-6, and BB-12. Flows range from about 8 to 2,200 gpm. The town of Springville obtains its water supply from spring M-8, which between October 1960 and June 1961 had a minimum flow of 900 gpm on October 26, 1960, and a maximum flow of 2,200 gpm on April 5, 1961. Acmar, Ashville, Branchville, Markeeta, Pell City, and Avondale Mills at Pell City, also obtain their water supplies from springs issuing from the dolomites. The town of Steele obtains its water supply from a drilled well that yields 150 gpm of water from fractures and solution cavities in the dolomites. The hardness of water from the Cambrian and Ordovician dolomites ranges from 12 to 408 ppm and has a median of 119 ppm, determined from 56 analyses (fig. 9).

ORDOVICIAN SYSTEM

LONGVIEW, NEWALA, AND ODENVILLE LIMESTONES

The Longview, Newala, and Odenville Limestones of Early Ordovician Age are mapped as one unit in this report (pl. 2). The Longview and Newala are present in a narrow valley that extends northeastward from Leeds in southwest St. Clair County through Odenville to Greensport. The only known outcrop of Odenville Limestone in the county is in the same valley one-third mile east of Odenville.

The Longview overlies the Cambrian and Ordovician dolomites and is composed of light-gray thick-bedded cherty limestone and dolomite. Overlying it is the Newala, a pure dark- to pearl-gray thick-bedded limestone containing some dolomite. The pearl-gray color predominates and is characteristic of the Newala in St. Clair County. The Odenville Limestone, which overlies the Newala, consists of about 50 feet of argillaceous and siliceous dark-gray fine-grained cherty limestone. The Longview, Newala, and Odenville Limestones yield adequate water for domestic supplies and will probably yield larger quantities of water to wells that penetrate fractures and solution cavities. The hardness of water from the limestones ranges from 14 to 294 ppm and has a median of 164 ppm, determined from 11 analyses (fig. 9)

MOSHEIM, LENOIR, AND LITTLE OAK LIMESTONES

The lower Ordovician Mosheim, Lenoir, and Little Oak Limestones are mapped as one unit in this report (pl. 2). These formations are present in the valley from Leeds to Odenville, and the Lenoir continues northeastward to Greensport. The Little Oak also is present in the valleys and along the northwestern flanks of the ridges southeast of Ragland and northwest of Pell City. Where the Mosheim is present it overlies the Odenville and consists of about 50 feet of blue-gray thick-bedded compact and brittle limestone. The texture of the Mosheim is a typical vaughanite as seen in a railroad cut half a mile west of Odenville. The Lenoir unconformably overlies the Mosheim southwest of Odenville and unconformably overlies the Newala northeast of Odenville. The Lenoir may be seen along the northwestern flank of a ridge at Greensport and in a railroad cut 1 mile east of Odenville. It consists of about 500 feet of dark-gray medium thick-bedded finely crystalline limestone. The Little Oak Limestone unconformably overlies the Lenoir Limestone southwest of Odenville and unconformably overlies the Frog Mountain Sandstone of Devonian age along the ridges southeast of Ragland. The Little Oak in St. Clair County is composed of 50 to 500 feet of dark-gray thick-bedded coarsely crystalline limestone. It may be seen in a quarry 1½ miles southwest of Ragland. The National Cement Co. at Ragland pumps about 100,000 gpd (gallons per day) of water from the quarry.

The city of Leeds in Jefferson County obtains a part of its water supply from spring Z-7 in St. Clair County. The spring issues from openings in the Lenoir or Little Oak Limestone and has a reported yield of about 400 gpm. Wells P-11, P-12, and P-13 at Odenville yield water from the Lenoir Limestone. In 1928, well P-11 was "***pumped at 10 gallons a minute without a noticeable drawdown." and well P-13 "***yielded 40 gallons a minute for 50 hours with a maximum drawdown of 20 feet." (Johnston, 1933, p. 303). The town of Odenville obtains its water supply from well P-12 which has a reported yield of about 100 gpm. The hardness of water from the Mosheim, Lenoir, and Little Oak Limestones ranges from 34 to 216 ppm and has a median of 124 ppm, determined from 11 analyses (fig. 9).

CHICKAMAUGA LIMESTONE

The Chickamauga Limestone of Ordovician age crops out in narrow bands in many places throughout the northwestern half of St. Clair County (pl. 2). The Chickamauga differs considerably in lithology from place to place in the county. In the central part it consists of about 200 feet of red and (or) green shale, red coarse-grained sandstone, and gray thin- to thick-bedded argillaceous limestone. North of Steele, the Chickamauga is 650 feet thick and the basal part includes a layer of conglomerate containing chert gravel (Adams and others, 1926, p. 120). This layer is known as the Attalla Chert Conglomerate Member. No wells or springs in St. Clair County are known to yield water from the Chickamauga Limestone.

SILURIAN SYSTEM

RED MOUNTAIN FORMATION

The Red Mountain Formation of Silurian age crops out in five areas in the northwestern part of St. Clair County (pl. 2). The formation varies considerably in lithology and thickness but it generally becomes thinner southeastward in the county. In the northern part of the county, the Red Mountain consists of 400 to 500 feet of brown, red, and green shale containing ferruginous beds in the lower half of the formation and brown fine-grained thin- to thick-bedded sandstone in the upper half. Along the crest of a ridge 3 miles southeast of Ashville, it consists of about 50 feet of gray to tan thin- to thick-bedded sandstone that is stained brown and interbedded with shale.

Wells C-3 and M-7 yield water from the Red Mountain Formation. Well C-3 was drilled to a depth of 875 feet to explore iron ore. It had a reported flow of 4 gpm and a reported water level of 6 feet above the land surface in the fall of 1946. Although the water is being used, it is undesirable for domestic use because of the mineral content–iron 2.0 ppm, calcium 248 ppm, sulfate 656 ppm, and hardness 718 ppm (table 1). The hardness of water from well M-7 is 216 ppm (table 3).

DEVONIAN SYSTEM

FROG MOUNTAIN SANDSTONE

The Frog Mountain Sandstone of Devonian age consists of 20 to 50 feet of tan, gray, or gray with red stain, thin- to medium-bedded sandstone and sandy shale. It is present in a ridge 3½ miles southeast of Ashville and in the ridges 2 miles southeast of Ragland. No wells or springs yield water from the Frog Mountain Sandstone in St. Clair County.

CHATTANOOGA SHALE

The Chattanooga Shale of Devonian age consists of 6 to 35 feet of gray to black organic pyritiferous marine shale that is sparsely fossiliferous. It is absent in the southeastern part of the county but is present in some of the ridges northwest of the Cahaba fault (pl. 2). The shale becomes thicker northward in St. Clair County and attains a thickness of 35 feet 3½ miles northwest of Steele. The Chattanooga Shale is not an aquifer in St. Clair County.

MISSISSIPPIAN SYSTEM

MAURY FORMATION

The Maury Formation is included with the Fort Payne Chert on the geologic map (pl. 2). The Maury has been considered by earlier workers in Alabama to be a part of the Chattanooga Shale of Devonian age; however, it is now considered to be Early Mississippian (Hass, 1956, p. 7, 13). The Maury unconformably overlies the Frog Mountain Sandstone southeast of the Cahaba fault (pl. 2) and conformably overlies the Chattanooga Shale northwest of the fault. The Maury consists of 2 to 5 feet of green, red, and gray claystone that is glauconitic, pyritiferous, and contains phosphate nodules. The Maury is not an aquifer in St. Clair County.

FORT PAYNE CHERT AND TUSCUMBIA LIMESTONE

The Fort Payne Chert and the Tuscumbia Limestone of Mississippian age are mapped as one unit in this report (pl. 2). The Fort Payne is present throughout the county in the many conspicuous ridges formed in part by its highly resistant and steeply inclined beds, which generally strike northeastward. The Fort Payne overlies the Maury Formation and consists of about 120 feet of light-gray or white thin- to medium-bedded siliceous limestone and nodules of light- to dark-gray chert. The formations weather to a fossiliferous cherty rubble containing abundant crinoid stems. The highly fossiliferous chert is a characteristic by which the Fort Payne may be readily distinguished from the sparsely fossiliferous cherts of the Cambrian and Ordovician dolomites.

The Tuscumbia Limestone is composed of 15 to 25 feet of gray limestone and chert. It overlies the Fort Payne in the northwestern part of the county and is absent southeast of the Eden fault (pl. 2). Water in the Fort Payne and Tuscumbia occurs in openings along joints and bedding planes and many of these openings have become enlarged by the solvent action of ground water. Springs issuing from openings in the Fort Payne and Tuscumbia yield from 60 to about 400 gpm, and wells that penetrate openings may yield similar quantities. Springs E-8, V-2, V-9, and W-8 yield water from the Fort Payne and the Tuscumbia. The hardness of water from the Fort Payne Chert and Tuscumbia Limestone ranges from 16 to 784 ppm and has a median of 136 ppm, determined from 13 analyses (fig. 9).

STE. GENEVIEVE LIMESTONE, GASPER FORMATION, AND HARTSELLE SANDSTONE

The Ste. Genevieve Limestone, the Gasper Formation, and the Hartselle Sandstone of Mississippian age are mapped as one unit (pl. 2). The Ste. Genevieve, where present in St. Clair County, overlies the Tuscumbia Limestone. It is composed of gray to blue medium- to thick-bedded dense to coarsely crystalline fossiliferous limestone and interbedded with gray shale. There are many exposures along Little Canoe Creek in the northern part of the county, particularly in the NW¼ sec. 21, T. 12 S., R. 4 E. The Gasper is composed of 50 to 200 feet of dark-gray to black or dark-brown shale containing many thin ferruginous layers. It is exposed along some of the road cuts in the ridges northwest of Shoal Creek and along State Highway 174, 2½ miles south of Odenville. The Hartselle conformably overlies the Gasper, and, in most parts of the county, is composed of about 200 feet of brown weathering siltstone in the lower part and light-gray fine-grained thin- to medium-bedded laminated sandstone in the upper part. A good exposure of the Hartselle can be seen in a road cut along State Highway 174, 2½ miles south of Odenville. The sandstone yields adequate quantities of water to wells for domestic and stock supplies and locally yields much larger supplies. Well B-3 is reported to have been tested in September 1957 at 250 gpm. Springs J-9 and J-11 issue from openings in the sandstone and on June 8, 1961, had measured flows of 630 gpm and 1,500 gpm, respectively. The hardness of water from the Ste. Genevieve Limestone, Gasper Formation, and Hartselle Sandstone undifferentiated ranges from 12 to 228 ppm and has a median of 45 ppm, determined from 20 analyses (fig. 9).

BANGOR LIMESTONE

The Bangor Limestone of Mississippian age crops out in the northern and northwestern parts of the county (pl. 2). It is composed of about 400 to 500 feet of gray to dark blue-gray medium- to thick-bedded crystalline and fossiliferous limestone, and nodules of dark-gray chert. The limestone yields adequate water to domestic wells and will probably yield large quantities of water to wells that penetrate fractures and solution cavities. Spring E-5, which issues from the Bangor, flowed 1,500 gpm on June 8, 1961. The hardness of water from the Bangor Limestone ranges from 136 to 230 ppm and has a median of 158 ppm, determined from 6 analyses (fig. 9).

FLOYD SHALE

The Floyd Shale of Mississippian age crops out in two bands which trend northeastward southeast of the Cahaba fault (pl. 2). The western band of Floyd overlies the Hartselle Sandstone and the eastern band overlies the Fort Payne Chert. The Floyd thickens southward and eastward of the Cahaba Barrier, where it includes beds equivalent to the Bangor Limestone, Hartselle Sandstone, and the Gasper Formation to form a homogenous shale body which extends from the base of the Ste. Genevieve Limestone to the base of the Parkwood Formation (Adams and others, 1926, p. 204). The Floyd consists of about 15 to 2,000 feet of gray to black, light-brown, and dull green shale; fine-grained thin-bedded sandstone; and siltstone interbedded with thin ferruginous beds. In places, the lower part of the Floyd contains layers of limestone. The Floyd yields small quantities of water to many domestic and stock wells and for a short period as much as 250 gpm to industrial test wells in Pell City; however, the industrial wells were abandoned because of declining yields and the development of sinkholes within the area influenced by pumping. Well BB-3, former source of supply for the town of Eden—now a part of Pell City, yielded 26 gpm of water on February 25, 1946. Water from the Floyd generally contains excessive amounts of iron and locally may be highly mineralized. The hardness of water from the Floyd Shale ranges from 12 to 2,870 ppm and has a median of 134 ppm, determined from 33 analyses (fig. 9).

PENNINGTON AND PARKWOOD FORMATIONS

The Pennington Formation of Mississippian age is composed of 25 feet or less of interbedded red and tan shale. For the purpose of this report, the Pennington was included with the Parkwood Formation on plate 2. The Parkwood Formation of Mississippian age overlies the Pennington Formation and underlies the Pottsville Formation of Pennsylvanian age. It crops out in narrow bands along the lower slopes of upland areas and ridges capped by the Pottsville. The Parkwood is 400 to 700 feet thick and is composed of light-gray to white fine-grained thin- to medium-bedded moderately well cemented sandstone in the basal part of the formation, and gray or greenish-gray shaly siltstone in the upper part. The formation weathers brown. The Pennington and Parkwood Formations are poor aquifers in St. Clair County. Well E-3 yields water from the Pennington or Parkwood Formation but the supply is inadequate during the dry season.

PENNSYLVANIAN SYSTEM

POTTSVILLE FORMATION

Overlying the Parkwood Formation is the Pottsville Formation of Pennsylvanian age, which is composed of about 600 to more than 1,300 feet of tan to gray thin- to thick-bedded sandstone, tan to dark-gray shale, and many coal beds. Ridges are formed by resistant beds, which are most common in the lower part of the formation, and valleys are underlain by the less resistant beds. The Pottsville crops out in three large areas in the county and along the Blount-St. Clair County line (pl. 2). Artesian conditions are favorable for flowing wells in topographically low areas of the Pottsville outcrop, and these areas are shown on plate 2.

Data were obtained for five wells that flow 5 gpm or less (table 3). Based on reported data, wells that penetrate openings in the Pottsville yield as much as 130 gpm; however, yields are generally less than 50 gpm. Water obtained from the Pottsville generally contains an excessive amount of iron. The hardness of water from the Pottsville Formation ranges from 10 to 208 ppm and has a median of 74 ppm, determined from 45 analyses (fig. 9).

ECONOMIC GEOLOGY

Minerals and rocks that are of economic importance in St. Clair County include: coal, clay and shale, limestone, chert, and iron ore. The locations of mines, pits, and quarries are shown on plate 1.

COAL

The Cahaba Basin and the Coosa Basin are two important coal fields in St. Clair County. The Cahaba Basin is in west-central St. Clair County, in the outcrop of the Pottsville Formation, and is bounded on the southeast by the Cahaba fault (pl. 2). Coal is mined in the Cahaba Basin in the vicinity of Acmar and Margaret by the stripping method. Only small quantities of coal are mined from shaft mines because of high labor cost. The Coosa Basin is southeast of the Cahaba fault in the outcrop of a broad band of Pottsville. Relatively small quantities of coal are being mined from shaft mines in the Coosa Basin. Most of the coal is mined by stripping in the vicinity of Wattsville. The reserves of coal reported here were computed by Rothrock (1949) to represent the quantity of coal in the ground, a figure that must be reduced to indicate the tonnage that may be extracted. The northeastern part of the Coosa coal field in St. Clair County has reserves of 19,397,000 short tons of coal in place in coal beds 20 inches or more thick, and reserves of 11,323,000 short tons of coal in place in coal beds from 14 to 19 inches in thickness. The coal in the Coosa coal field in St. Clair County is of the high volatile bituminous A, and medium volatile bituminous ranks (Rothrock, 1949, p. 80). It has been used for domestic purposes, for generating steam, and for making coke, although, because of the generally high sulfur and ash content, it is unsuited for making metallurgical coke.

ore in St. Clair County is given in Alabama Geological Survey Special Report 19, "Iron Ore Outcrops of the Red Mountain Formation in Northeast Alabama," by Ernest F. Burchard and Thomas G. Andrews.

SUMMARY

Ground water from wells and springs is the source for most domestic, stock, industrial, and public supplies. Shallow dug wells, which fail to furnish adequate quantities of water for domestic and stock supplies, can be supplemented with deeper drilled wells in most parts of the county. Public water supplies are adequate for present needs, except at Acmar, Markeeta, and Pinedale Shores.

The Conasauga Formation, the Cambrian and Ordovician dolomites, the Floyd Shale, and the Pottsville Formation are the sources of water for most wells and springs in the county. Wells generally yield small quantities of water from the Conasauga; 20 to 150 gpm from the Cambrian and Ordovician dolomites; 65 to 250 gpm from the Ste. Genevieve Limestone, Gasper Formation, and Hartselle Sandstone; 2 to 30 gpm from the Floyd Shale; and 7 to 130 gpm from the Pottsville Formation.

Springs yield 10 to 470 gpm of water from the Conasauga Formation; 8 to 2,200 gpm from the Cambrian and Ordovician dolomites; as much as 400 gpm from the Ordovician limestones; 60 to 400 gpm from the Fort Payne Chert; as much as 1,500 gpm from the Ste. Genevieve Limestone, Gasper Formation, and Hartselle Sandstone undifferentiated; and 50 to 1,500 gpm from the Bangor Limestone.

The estimated daily average ground-water usage from wells and springs in St. Clair County in 1960 was 1,825,000 gallons.

The quality of ground water is generally good, except for the hardness of water from some of the aquifers, the sulfurous odor of some water from the Conasauga Formation, and the excessive iron content of water from the Floyd Shale and the Pottsville Formation. The median hardness of water from the aquifers ranges from 45 ppm in the Ste. Genevieve Limestone, Gasper Formation, and Hartselle Sandstone undifferentiated to 200 ppm in the Conasauga Formation (fig. 9). The iron content of water from 4 wells in the Pottsville ranges from 0.59 to 3.4 ppm. The median temperature of ground water in St. Clair County is 61 °F.

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CLAY AND SHALE

Clays and shales are widely distributed, being found in practically every county in the State and in most of the geologic formations. The most abundant types are the brick clays and shales because common brick can be made from practically any plastic clay or shale that is free from particles of limestone or dolomite. Clay and shale suitable for the manufacture of brick are interbedded with layers of sandstone and coal in the Pottsville Formation. The Ragland Brick Co. at Ragland manufactures about 50,000 common bricks daily from shale in the Pottsville Formation.

Fire clays, used in making refractory clays and fire bricks, are those which do not fuse unless subjected to a very high temperature. Clay approaching fire clay in quality is exposed in a railroad cut in the NW¼ sec. 31, T. 15 S., R. 4 E. (Rothrock, 1949, p. 92).

LIMESTONE

Limestone is quarried in large quantities from the Little Oak Limestone in St. Clair County and is used to manufacture cement at Ragland. The present quarry of the National Cement Co. is 1½ miles south of Ragland (pl. 1). The limestone in the Little Oak is sufficient for long-term quarrying.

CHERT

Many chert quarries are in the outcrops of the Cambrian and Ordovician dolomites and the Fort Payne Chert. Chert is used extensively as a road base in St. Clair County. The locations of the principal chert quarries in the county are shown on plate 1.

IRON ORE

Red iron ore crops out in St. Clair County northwest of U.S. Highway 11 in the ridges formed by the resistant sandstone of the Red Mountain Formation. The thickness of the ore beds ranges from 1 inch or less to a maximum of 7½ feet, but the thickness in most places is less than 2 feet (Burchard and Andrews, 1947, p. 44). Iron ore was extracted from several mines northeast of Odenville during World War II; however, there are no mines known to be operating in St. Clair County at present. Detailed information on iron

BASIC DATA

Table 3.–*Records of wells and springs in St. Clair County, Ala.*

Well or spring no.: Numbers correspond to those in plate 1 and table 1; asterisk indicates chemical analysis given in table 1.
Type: D, drilled well; Du, dug well; S, spring.
Depth of well and water level: Reported depths are given in feet; measured depths are given in feet and tenths.
Altitude: Altitudes determined by aneroid barometer.
Method of lift: C, cylinder; F, flows; J, jet; M, manual; N, none; S, submergible; T, turbine.
Use of water: D, domestic; I, industrial; N, not used; P, public supply; S, stock.

Water-bearing formation: €c, Conasauga Formation; O€u, Ketona(?), Copper Ridge, and Chepultepec Dolomites undifferentiated; Ool, Longview, Newala, and Odenville Limestones; Olm, Mosheim, Lenoir, and Little Oak Limestones; Srm, Red Mountain Formation; Dfm, Frog Mountain Sandstone; Mfm, Maury Formation and Fort Payne Chert; Mtm, Maury Formation, Fort Payne Chert, and Tuscumbia Limestone; Mhs, Ste. Genevieve Limestone, Gasper Formation, and Hartselle Sandstone; Mb, Bangor Limestone; Mf, Floyd Shale; Mpp, Pennington and Parkwood Formations; IPpv, Pottsville Formation.

Well or spring	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (°F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
B- 1	J. T. Gaines	....	Du	29.5	24	O€u	604	1[illegible].2	9-1[illegible]-60	M	D	61	11	18	Terra-cotta casing to 29 ft. Supplies 1 family. Dug in 1925.
B- 2	Guy Bynum	....	D	38.7	6	IPpv	1,334	26.3	8-17-60	M	D	59	35	34	Cased to 6 ft. Supplies 1 family.
*B- 3	Camp Sumatanga...	C. R. Killian ...	D	258	8	Mhs	772	27	9- -57	T	P	..	..	..	Cased to 190 ft. Supplies church camp. Reported drawdown, 83 ft. after 24 hrs. pumping 250 gpm in Sept. 1957. Water contains excessive iron.

B- 4	Chandler Mountain School.	W. C. Chapman. .	D	160	6	IPpv	1,280	9.2	8-17-60	J	P	..	7	20	Supplies 110 students, 4 teachers, and 1 family. Water contains excessive iron.
B- 5	Town of Steele	Carl Pace	D	250	8	OЄu	640	40	3-25-54	T	P	..	4	192	Cased to 165 ft. Supplies 194 customers. Reported drawdown, 60 ft. after 24 hrs. pumping 150 gpm on 3-26-54.
B- 6	Lonnie Willingham. .	....	D	.....	6	OЄu	589	16.5	9-19-60	J	D	..	7	150	Supplies 1 family and cafe-service station.
C- 1	J. C. Conn........	....	D	32.1	6	Mtm	836	13.6	9- 1-60	M	N	65	7	60	
C- 2	...do............	C. R. Killian....	D	108	6	Mtm	841	15.1	9- 1-60	J	D	..	4	90	Supplies 4 families. Reported yield, 60 gpm in 1954.
*C- 3	Paul Jones.........	U.S. Bureau of Mines.	D	875	3	Mtm Srm	848	1.8	9- 1-60	J	D,S	..	7	784	Cased to 300 ft. Supplies 3 families, 35,000 chickens, and several head of stock. Reported water level, 6 ft. above land surface in 1946. Drilled to explore iron. See driller's log in table 5.
C- 4	Camp Sumatanga...	C. R. Killian...	D	158	6	Mhs	831	77.5	9- 6-60	J	P,D	..	4	142	Cased to 90 ft. Supplies church camp and 1 family.
C- 5	...do............	...do.........	D	280	8	Mhs	789	37.8	9- 6-60	T	P	..	..	...	Cased to 90 ft. Supplies church camp. Reported yield, 65 gpm in July 1960. Water contains excessive iron. See driller's log in table 5.
E- 1	Willie Smith.......	....	D	30.7	6	Mhs	820	14.5	9- 1-60	M	D	63	4	42	Supplies 1 family.
E- 2	Virgil Nelson......	R. M. Towns....	D	48.7	8	Mb	675	23.3	9- 6-60	M	D	61	14	230	Do.

Table 3.–*Records of wells and springs in St. Clair County, Ala.*–Continued

Well or spring	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (°F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
E- 3	John Awtrey......	....	D	107.3	6	Mpp	697	71.9	9- 6-60	J	D	..	11	204	Cased to 25 ft. Inadequate supply.
E- 4	J. S. Burttram.....	....	D	50	6	Mb	675	22.4	9-14-60	J	D	..	4	186	Supplies 1 family. Water contains iron.
E- 5	John Awtrey......	....	S	......	..	Mb	605	....	....	F	S	58	4	148	Known as Muckleroy Spring. Measured flow, 1,500 gpm on 6-8-61.
E- 6	Jack Partlow.....	....	Du	15.4	36	Ꞓc	624	13.8	9-21-60	M	D	62	4	246	Rock curbing. Supplies 1 family.
E- 7	W. W. Bowlin.....	....	D	37.2	6	Ꞓc	584	15.1	9-21-60	J	D	..	7	216	Supplies 2 families. Can be pumped dry.
E- 8	Mrs. Minnie Early .	....	S	......	...	Mtm	643	....	....	F	S	59	4	118	Known as Early Spring. Measured flow, 230 gpm on 6-8-61.
E- 9	J. E. Rickles.....	B. M. Rickles ..	D	75	6	Mb	736	18.6	9-14-60	N	N	..	..	...	
E-10	B. L. Sloan.......	....	D	96	6	Mb	749	33.2	9-14-60	J	D,S	..	7	142	Supplies 2 families and 12,000 chickens.
E-11	Quince Roberson..	C. R. Killian...	D	59.7	6	Mb	721	38.8	11- 9-60	M	D	61	18	136	Cased to 60 ft. Supplies 1 family.
E-12	R. C. Burnett.....	....	Du	23.0	24	Ꞓc	628	10.3	11-14-60	P	D	..	2	188	Cased to 21 ft. Supplies 1 family.
E-13	Charlie Partlow...	....	Du	17.2	36	Ꞓc	614	14.4	11-14-60	M	D	61	11	170	Supplies 1 family.
E-14	Mrs. J. H. Sheffield	....	Du	18.9	30	Ꞓc	590	12.8	9-21-60	N	N	..	..	...	Not cased.

F- 1	Quint Hollingsworth	J. H. Beard	D	100	6	Ꞓc	600	24.4	9-19-60	M	D	61	7	204	Cased to 27 ft. Supplies 1 family. Bedrock at 25 ft.
F- 2	Mrs. Nellie Hallmark.	....	D	48.2	6	Mhs	677	22.8	8-17-60	M	D	62	18	228	Supplies 1 family. Water contains excessive iron.
F- 3	Harleston Hollingsworth.	C. R. Killian ...	D	65	6	OꞒu	614	11.4	9-19-60	J	D	..	4	194	Cased to 65 ft. Supplies 1 family. Flows during wet season.
F- 4	Pauline Conn.....	....	D	80	6	OꞒu	620	25.3	9-19-60	J	D	..	7	164	Cased to 80 ft. Supplies 1 family.
F- 5	Jesse Jones......	C. R. Killian ...	D	130	6	Ꞓc	578	40.8	9-19-60	J	D	..	14	44	Cased to 42 ft. Supplies 1 family.
F- 6	L. C. Ingle.......	....	D	...	6	Ꞓc	550	20.8	10-27-60	J	D	..	4	142	Supplies 1 family.
F- 7	M. O. Mashburn ...	....	S	...	..	OꞒu	532	....	....	F	D	60	4	196	Known as Mashburn Spring. Supplies 3 families. Estimated flow, 75 gpm on 10-27-60.
F- 8	B. L. Martin......	....	Du	29.1	36	Ꞓc	549	7.7	10-27-60	J	D,S	66	11	20	Lined with rock. Supplies 1 family and 18 head of stock.
F- 9	Bill Bragg........	....	Du	33.9	36	Mtm	599	31.4	11-21-60	J	D	..	25	16	Lined with rock. Supplies 1 family.
G- 1	R. H. Fields......	J. H. Beard	D	227	6	OꞒu	531	34.4	11-21-60	J	D	..	..	...	Cased to 42 ft. Supplies 1 family.
G- 2	R. B. Patton......	......do	D	58.9	6	Ꞓc	530	10.1	10-27-60	J	D,S	..	7	230	Supplies 1 family and 2 head of stock.
G- 3	W. A. J. Swann....	....	Du	30.0	36	Ꞓc	532	20.2	10-27-60	J	D,S	..	14	172	Not cased. Supplies 1 family and 20 head of stock.
G- 4	Paul Bearden.....	J. H. Beard	D	96.5	6	Srm (?)	640	26.1	11-21-60	N	N	..	..	...	Cased to 9 ft.
G- 5	A. D. Jester......	E. C. Standfield	D	51	6	Mtm	558	10.2	12- 7-60	C	D	..	4	188	Cased to 25 ft- Supplies 2 families.
G- 6	J. H. McEntyre....	....	Du	28.4	30	Ꞓc	538	16.0	12- 7-60	M	D	61	50	148	Not cased. Supplies 1 family.

Table 3.–*Records of wells and springs in St. Clair County, Ala.*–Continued

Well or spring	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (°F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
G- 7	T. C. Ford........	....	Du	24.4	24	Ꞓc	537	17.4	12- 7-60	M	D	62	21	150	Supplies 1 family; inadequate during dry season.
G- 8	Otis Jester.......	....	D	...	6	Mtm	549	22.2	12- 7-60	J	D	..	2	154	Supplies 1 family.
G- 9	A. B. Reeves	....	D	72.1	6	Mtm	625	23.1	11-21-60	C	D	..	7	196	Supplies 1 family.
G-10	-- Shirley.........	....	Du	17.0	36	Ꞓc	524	14.9	12- 8-60	M	D	60	4	212	Do.
J- 1	Mrs. P. A. Green ..	....	Du	20.8	24	Ool	499	17.2	12- 7-60	C	D	..	5	248	Rock lined. Supplies 1 family. Dug about 1850.
J- 2	Ernest Ostrowski ..	Fords Valley Drilling Co.	D	102	6	OꞒu	528	34.7	12- 8-60	J	D,S	..	11	120	Supplies 1 family, dairy, and 26 cows.
J- 3	Mrs. Mable Morris..	....	Du	35.0	30	OꞒu	527	30.1	12- 8-60	J	D	..	39	52	Not cased. Supplies 1 family.
J- 4	Mrs. D. W. Dye....	....	Du	30.2	30	OꞒu	565	12.2	12-14-60	M	D	62	7	154	Rock lined. Supplies 1 family; inadequate during dry season.
J- 5	H. D. Bowlings....	....	Du	26.1	30	OꞒu	540	19.3	12-14-60	M	D	58	11	22	Supplies 1 family.
J- 6	David Green	....	D	83.7	6	Mhs	536	17.1	12- 7-60	N	N	..	..	...	
J- 7	John E. Gupton....	....	Du	41.1	30	Mf	580	34.4	12- 8-60	M	D	61	35	92	Not cased. Supplies 1 family.
J- 8	James C. Sanders..	Fords Valley Drilling Co.	D	82	6	Mf	543	15.3	12- 7-60	J	D	..	2	58	Supplies 1 family. Water contains excessive iron. Well equipped with water conditioner.

J- 9	C. D. Wilson......	....	S	...	..	Mhs	531	...	....	F	D	61	2	152	Known as Wilson Spring. Supplies 1 family. Measured flow, 630 gpm on 6-8-61.
J-10	H. A. O'Donnell...	W. C. Chapman..	D	75	6	Mf	542	4.7	11- 3-60	J	D	..	0	106	Cased to 14 ft. Supplies store-service station. Water contains excessive iron.
J-11	Mrs. J. L. Sanders.	....	S	...	..	Mhs	551	...	....	F	D,S	62	4	160	Known as Sanders Spring. Supplies 1 family and 6 head of stock. Measured flow, 1,500 gpm on 6-8-61.
J-12	R. L. Wilson......	W. C. Chapman..	D	75	6	Mf	583	19.5	11- 3-60	J	D	..	7	38	Cased to 38 ft. Supplies 1 family. Water contains excessive iron. Well equipped with water conditioner.
J-13	Free Will Baptist Church.	....	D	79	6	Mf	608	14.0	11- 3-60	J	P	..	2	88	
J-14	Hughie Echols	W. C. Chapman..	D	101	6	IPpv	768	31.6	11- 3-60	J	D	..	0	74	Cased to about 20 ft. Supplies 1 family. See driller's log in table 5.
K- 1	Robert F. Davis...	....	S	...	..	Ꞓc	579	...	....	F	S	60	2	144	Known as Davis Spring. Measured flow, 470 gpm on 6-8-61.
K- 2	E. T. McBrayer....	--Brown.......	D	123	6	Ꞓc	607	20.2	11-22-60	J	D	..	7	182	Cased to 50 ft. Supplies 1 family. Water contains some iron.
*K- 3	Town of Ashville..	....	S	...	..	OꞒu	544	...	....	F	P	63	7	172	Known as Ashville Spring. Supplies 285 customers. Measured flow, 670 gpm on 6-8-61.
K- 4	--Henry..........	....	D	62.0	6	Ꞓc	581	10.9	9-21-60	N	N	..	..	...	
K- 5	John Ramsey......	....	Du	28.0	36	OꞒu	583	22.0	11- 9-60	M	D	59	7	38	Lined with rock. Supplies 1 family.

Table 3.–*Records of wells and springs in St. Clair County, Ala.*–Continued

Well or spring	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (°F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
K- 6	George W. Franklin	....	Du	17.2	48	€c	633	8.2	11-22-60	M	D	60	4	114	Not cased. Supplies 1 family.
K- 7	J. C. Wooten......	....	Du	20.8	24	O€u	579	18.7	11-21-60	M	D	63	4	214	Lined with rock. Supplies 1 family.
K- 8	C. D. Bigham.....	....	Du	13.8	24	€c	566	6.6	11-21-60	C	D	61	42	284	Lined with rock. Supplies 1 family; inadequate during summers of 1955-57.
K- 9	James Swindall....	....	Du	28.7	24	O€u	590	23.2	12-14-60	M	D	59	7	28	Cased with concrete tile. Supplies 1 family; inadequate during dry season.
K-10	Fitzgerald Yarbrough.	E. C. Standfield	D	175	6	O€u	601	34.8	11- 7-60	J	D	..	2	12	Cased to about 170 ft. Supplies 1 family.
K-11	S. P. McLendon...	....	Du	36.3	36	O€u	641	20.8	11- 7-60	M	N	61	4	16	Lined with rock. Reported almost dry in 1954.
*K-12	T. E. Jones	--Brown.......	D	84	6	€c	614	23.1	9-22-60	J	P	..	11	334	Cased to 34 ft. Supplies cafe.
K-13	Manley Cox, Jr....	....	Du	32.1	30	O€u	610	28.2	11- 7-60	J	D	..	32	94	Cased to concrete tile. Supplies 1 family.
K-14	Cecil Monroe	....	Du	35.2	30	O€u	603	24.2	11- 7-60	M	D	62	78	60	Cased with concrete tile. Supplies 1 family.

K-15	W. M. Franklin	....	Du	34.4	36	Mhs	590	25.6	11- 3-60	M	D	60	11	12	Not cased. Supplies 2 families. Water contains some iron.
K-16	L. B. White	W. C. Chapman	D	62	6	Mhs	595	33.8	11- 3-60	J	D	..	4	18	Supplies 1 family.
K-17	W. A. Johnson	Fords Valley Drilling Co.	D	88	6	Mhs	641	8.0	11- 7-60	J	D	..	2	28	Cased to 82 ft. Supplies 1 family. Flowed for about 2 weeks after drilled.
K-18	Edgar Smith	....	Du	24.1	36	Mhs	614	21.0	11-10-60	M	D	61	14	14	Not cased. Supplies 1 family.
L- 1	Pinedale Shores Co.	....	D	...	8	Ꞓc	564	12.7	9-22-60	S	P	..	11	230	Well no. 1. Yields about 10 gpm. Supply inadequate.
L- 2	...do	....	D	...	8	Ꞓc	564	13.7	9-22-60	C	P	..	11	230	Well no. 2. Yields about 5 gpm. Supply inadequate.
L- 3	...do	....	D	...	8	Ꞓc	575	20.3	9-22-60	J	P	..	..	...	Well no. 3. Yields about 5 gpm. Supply inadequate.
L- 4	...do	....	D	...	8	Ꞓc	574	...	....	T	P	..	25	156	Well no. 4. Yields about 30 gpm. Water has sulfurous odor. Supply inadequate.
L- 5	J. D. Moore	....	Du	24.9	24	Ꞓc	634	6.6	9-22-60	C	D	..	4	28	Terra-cotta casing. Supplies store and service station.
L- 6	W. M. Burttrum	C. E. Wilks	D	220	6	Ꞓc	631	34.1	10- 6-60	S	D	..	28	140	Cased to 50 ft. Supplies 1 family. Reported yield, 1 gpm.
L- 7	Pinedale Shores Co.	....	D	...	8	Ꞓc	571	14.9	9-22-60	J	P	..	7	324	Well no. 5. Yields about 10 gpm. Supply inadequate.
L- 8	O. R. Brooks	....	Du	25.5	36	Ꞓc	584	18.6	11- 9-60	J	D	..	11	228	Not cased. Supplies 1 family.
L- 9	B. H. Stevens	....	S	...	..	OꞒu	610	...	....	F	D	..	..	...	Known as Roberson Spring. Supplies 1 family. Estimated flow, 25 gpm on 11-22-60.

Table 3.–*Records of wells and springs in St. Clair County, Ala.*–Continued

Well or spring	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (°F)	Chloride (Cl) (ppm)	Hardness as CaCO$_3$ (ppm)	
L-10	C. D. Whittington		D	80	6	€c	594	19.8	11- 9-60	J	D	..	46	324	Supplies 1 family. Water contains sulfurous odor and excessive iron.
L-11	P. H. McCorkle		D	40	6	€c	625	11.2	10- 6-60	C	N	62	14	324	Cited as W. L. McCorkle well (Johnston, 1933, pt. 2, table 37, no, 11). Measured water level, 9.8 ft. 10-6-28.
L-12	Bud Washington		Du	18.1	48	€c	618	13.5	11-14-60	C	N	..	..	...	
L-13	W. G. Swindall	C. E. Wilks	D	150	6	€c	604	18.8	11-14-60	J	D	..	2	246	Cased to 29 ft. Supplies 1 family.
L-14	J. T. Swindall		Du	25.6	36	O€u	581	19.7	11-14-60	J	D	..	2	172	Not cased. Supplies 1 family and store; inadequate during summer of 1959.
L-15	Fred Blaxton		Du	37.6	36	€c	583	17.1	11-14-60	M	N	60	4	598	Lined with rock.
L-16	...do	O. L. Lee	D	110.9	6	€c	583	19.6	11-14-60	N	N	..	..	...	Cased to 25 ft. Yields very little water.
L-17	...do	...do	D	177	6	€c	583	16.5	11-14-60	N	N	..	..	...	
L-18	Ray Wyatt		D	155	6	O€u	673	79.7	10-27-60	J	N	..	..	...	Cased to 18 ft.
L-19	B. D. Smith		D	85	6	€c	614	16.8	11-15-60	J	D	..	4	266	Cased to 42 ft. Supplies 2 families. Water has sulfurous odor and excessive iron content.

L-20	George Williams ..	....	D	62	6	Ꞓc	686	17.3	11-14-60	J	D	..	11	362	Supplies 2 families. Water contains some iron.
L-21	L. Russell.......	W. C. Chapman .	D	85	6	OꞒu	612	43.5	11-22-60	J	D	..	5	208	Supplies 2 families.
L-22	W. M. Stancil.....	....	Du	23.0	42	Ꞓc	692	13.0	11-14-60	J	D	..	4	210	Lined with brick. Supplies 1 family. Water contains some iron.
L-23	L. H. Cash	....	Du	27.4	30	OꞒu	631	17.1	11-10-60	C	D,S	..	2	112	Lined with rock. Supplies 1 family and 700 chickens.
L-24	Clyde Thomas....	....	Du	24.6	36	OꞒu	620	16.6	11-10-60	C	D	..	4	98	Not cased. Supplies 2 families.
M- 1	Ted Holder.......	....	S	...	..	Mb	677	...	....	F	D,S	59	7	168	Supplies 2 families. Unnamed spring flowing about 50 gpm on 9-14-60.
M- 2	J. E. McCullough..	....	D	150	6	Mhs	690	42.5	11- 9-60	J	D,S	..	7	66	Cased to 40 ft. Supplies 1 family and 10,000 chickens. Water has sulfurous odor.
M- 3	H. E. Lankford....	A. C. Roberson	D	172	6	Mhs	636	18.3	11- 9-60	J	D	..	7	38	Supplies 1 family.
M- 4	L. F. McGinnis ...	O. L. Lee......	D	145	6	Mhs	662	35	1952	J	D,S	..	7	18	Cased to 35 ft. Supplies 1 family, dairy, and 40 cows. Water had sulfurous odor for 1 year after completion in 1952.
M- 5	George Oakes.....	W. C. Chapman .	D	270	6	Ꞓc	648	34.9	10- 6-60	C	D,S	..	14	170	Cased to 105 ft. Supplies 1 family and 41 head of stock. Water has sulfurous odor.
M- 6	E. W. Riley.......	....	S	..	..	Ꞓc	654	...	....	F	D	61	2	142	Supplies 1 family and fish pond. Unnamed spring flowing 80 gpm on 6-8-61.
M- 7	J. W. Wise........	....	D	93	6	Srm (?)	879	62.0	11- 9-60	J	D	..	11	216	Supplies 1 family.

Table 3.—*Records of wells and springs in St. Clair County, Ala.*—Continued

Well or spring	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level: Above (+) or below land surface (feet)	Water level: Date of measurement	Method of lift	Use of water	Field determinations: Temperature (°F)	Field determinations: Chloride (Cl) (ppm)	Field determinations: Hardness as CaCO$_3$ (ppm)	Remarks
*M- 8	Town of Springville.	....	S	..	..	O€u	710	..	....	F	P	62	4	158	Known as Springville Spring. Supplies 65,000 gpd to 300 services. Measured flow, 900 to 2,200 gpm (fig. 8).
M- 9	George Rankin....	....	D	59.9	6	Mhs (?)	705	8.7	12- 6-60	J	D	..	4	70	Supplies 1 family.
M-10	Minnie Woodall Estate.	....	S	...	..	€c	667	...	....	F	S	60	4	174	Unnamed spring flowing 690 gpm on 6-8-61.
N- 1	Perkins McClenden	....	S	...	..	O€u	732	...	....	F	D	59	2	118	Known as McClenden Spring. Supplies 3 families. Estimated flow, 50 gpm on 12-6-60.
N- 2	L. L. Terry.......	W. C. Chapman.	D	400	6	O€u	868	100	1- -60	S	D	..	11	286	Cased to 42 ft. Supplies 1 family. Reported yield, 3 gpm in January 1960.
*O- 1	John T. House....	....	S	..	..	O€u	713	...	....	F	S	60	2	148	Known as Trevenor Spring. Measured flow, 700 gpm on 6-7-61 with 8-inch flow pipe capped.

O- 2	L. E. Welch	....	D	32.1	6	O€u	843	10.3	10-26-60	J	N	..	..	...	
O- 3	...do	....	D	124.2	6	O€u	843	10.8	10-26-60	J	D	..	4	22	Supplies 1 family.
O- 4	William R. Hyman	C. E. Wilks	D	83	6	O€u	776	37.0	11-17-60	J	D	..	2	116	Do.
O- 5	N. F. Bush	...do	D	355	6	O€u	866	27.0	11-17-60	J	D	..	2	174	Cased to 21 ft. Supplies 1 family and store. Reported yield, 100 gallons per hour in October 1960.
O- 6	Joe Leopard	Paul Barontine	D	73	6	O€u	823	16.0	11-17-60	J	D	..	2	146	Cased to 73 ft. Supplies 1 family. Can be pumped dry.
O- 7	--Fuller	--Owens	D	41.5	6	IPpv	774	25.6	12-27-60	M	D	61	4	10	Cased to 9 ft. Supplies 1 family; inadequate during dry season. Water contains excessive iron.
P- 1	E. W. Riley	....	S	...	..	€c	640	...	....	F	N	60	7	200	Known as St. Clair Spring. Estimated flow, 10 gpm on 11-15-60. Water has sulfurous odor.
P- 2	...do	....	S	..	..	€c	632	...	....	F	N	61	4	162	Known as Big Spring. Measured flow, 240 gpm on 6-8-61.
P- 3	Dr. L. E. Kirby	....	D	70.0	6	Mhs	697	38.5	11-17-60	J	D	..	5	156	Supplies 3 families.
P- 4	Hubert W. Jones	C. E. Wilks	D	76	6	Mhs	693	1	10- -59	J	D	..	4	48	Cased to 40 ft. Supplies 1 family. Reported, water contains 5 ppm iron and 6.2 pH. Well equipped with water conditioner.
P- 5	Farris Washington	...do	D	106.9	6	Mhs	674	23.7	11-17-60	J	D	..	4	118	Cased to 71 ft. Supplies 2 families.
P- 6	L. A. Banks	....	D	53.1	6	IPpv	943	29.3	12-27-60	M	D	60	7	118	Cased to 20 ft. Supplies 1 family.
P- 7	Andy Walker	....	D	57.8	6	IPpv	860	11.4	12-27-60	M	D	62	4	142	Supplies 1 family. Water contains excessive iron.

Table 3.– *Records of wells and springs in St. Clair County, Ala.*–Continued

Well or spring	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (°F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
P- 8	O. L. Robertson...	....	D	90	6	Ool	700	18.7	12- 6-60	J	D	..	4	184	Supplies 1 family and service station.
P- 9	C. E. James......	....	D	300	6	ℙpv	656	...	....	N	P	..	..	...	Cased to 20 ft. Reserve supply for the town of Margaret.
P-10	...do...........	....	D	325	6	ℙpv	662	25	1960	T	P	..	4	96	Cased to 20 ft. Supplies 25,000 gpd for the town of Margaret. Reported yield, 35-50 gpm.
P-11	R. A. Bodiford....	....	D	285	2½	Olm	729	20.6	10-10-60	N	N	..	..	...	Cited as J. T. Bradshaw well (Johnston, 1933, pt. 2, table 37, no. 27). Water level of 25 ft. 10-8-28. Drilled to explore coal.
P-12	Town of Odenville.	R. M. Towns...	D	200	10	Olm	731	25	1960	T	P	..	4	216	Cased to 65 ft. Supplies the town of Odenville with 22,000 gpd. Cavity from 50 to 62 ft. Reported yield, about 100 gpm.
P-13	Seaboard Air Line Railroad.	....	D	187	10	Olm	731	..	....	N	N	..	..	...	Well plugged. Reported yield, 70 gpm (Johnston, 1933, pt. 2, table 37, no. 28).

Q- 1	R. E. Franklin....	F. O. Pugh....	D	80	6	Mfm	630	35.5	10-27-60	J	D	..	0	136	Cased to 42 ft. Supplies 2 families.
Q- 2	R. C. Trousedale..	....	Du	13.1	36	Ool	639	8.8	11-14-60	J	D	..	21	94	Not cased. Supplies 2 families.
Q- 3	Evergreen Methodist Church.	....	Du	46.5	30	OꞒu	674	38.7	11-15-60	N	P	..	..	...	Lined with rock to 46 ft.
Q- 4	P. F. Self Estate..	....	D	86.1	6	Ꞓc	659	18.7	11-15-60	M	D	61	4	188	Supplies 1 family.
Q- 5	H. H. Thomas.....	....	D	90	6	Ool	650	18.6	11-10-60	J	D	..	7	164	Do.
Q- 6	J. W. Bice, Jr.....	....	Du	39.9	36	Mhs	668	37.9	11-10-60	M	D	60	4	20	Not cased. Supplies 1 family; inadequate during dry season. Water contains some iron.
Q- 7	J. W. Bice, Sr.....	....	Du	30.8	30	Mhs	659	25.2	11-10-60	M	D	60	14	16	Not cased. Supplies 1 family.
Q- 8	C. T. Waters......	W. C. Chapman.	D	...	6	Mhs	691	13.6	11-10-60	J	D	..	4	16	Supplies 1 family.
Q- 9	J. W. Carter	C. E. Wilks....	D	215	6	Olm	709	40	11- -57	J	D	..	11	34	Drilled 78 ft. and cased to 35 ft. in April 1957 with cavity at 70-78 ft. Cased to 78 ft. and deepened in November 1957. Supplies 1 family.
Q-10	H. G. Hammock ...	--Perkins.....	D	89.7	6	Olm	703	29.4	12-19-60	M	D	61	4	58	Supplies 1 family. Water becomes muddy after rains.
Q-11	J. D. Lane.......	F. O. Pugh....	D	105.2	6	ℙpv	628	69.7	10-27-60	J	D	..	4	116	Supplies 1 family. Water contains excessive iron.
Q-12	Foreman Estate...	....	Du	26.5	30	Olm	689	14.2	12-19-60	M	D	61	4	40	Not cased. Supplies 1 family; inadequate during dry season. Muddy after heavy rain.
Q-13	Ralph Youngblood.	T. W. Cole & Son, Well Drillers.	D	75	6	ℙpv (?)	567	8.8	9-15-60	J	D	..	14	208	Supplies 1 family. Water contains excessive iron. Drilled through layer of coal.

Table 3.—*Records of wells and springs in St. Clair County, Ala.*—Continued

Well or spring	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (°F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
R- 1	Mrs. Jim Bice.....	....	D	99.5	6	ℙpv	722	44.6	9-21-60	M	D	62	4	164	Supplies 1 family.
R- 2	Alvirtis Day......	Harvey M. Richardson.	D	64.8	6	ℙpv	612	29.6	12- 8-60	M	D	62	2	62	Cased to 30 ft. Supplies 1 family. Water contains excessive iron.
R- 3	Billy Alverson	....	D	34.5	6	ℙpv	573	30.2	12- 8-60	M	D	62	2	34	Supplies 1 family; inadequate during dry season. Water becomes muddy when low.
R- 4	Hoyt Edge........	....	D	45.8	5	ℙpv	564	22.0	12- 8-60	M	D	63	2	40	Supplies 1 family.
*R- 5	Chester Savage....	Pennsylvania Drilling Co.	D	563	2½	ℙpv	545	...	......	F,J	D	..	4	118	Cited as core drill hole no. 9-20-CA (Rothrock. 1949, pt. 1, p. 117-119) Drilled to explore coal. Supplies 1 family. Reported flow, 1 to 2 gpm. Core description in table 4.
R- 6	Earnest Collins ...	W. C. Chapman.	D	42	6	Mf	495	23.8	10-12-60	J	D	..	14	36	Cased to 28 ft. Supplies 2 families.
R- 7	Mrs. Clifford Day..	...do.........	D	40	6	Mf	504	9.1	10-12-60	J	D	..	7	210	Cased to 15 ft. Supplies 1 family.
R- 8	M. T. Barber......	F. O. Pugh	D	60	6	Mf	521	20.2	10-12-60	J	D	..	4	148	Supplies 1 family.
R- 9	Luther Sweet......	J. H. Beard....	D	45	6	Mf	508	4.8	10-12-60	J	D	..	25	1,700	Do.

S- 1	L. J. Grizzell.....	....	Du	26	48	IPpv	699	22.7	11- 3-60	J	D	..	4	20	Supplies 2 families.
S- 2	Ragland Brick Co..	Virginia Well and Supply Co.	D	379	6	IPpv	519	19.1	8-31-60	N	N	..	..	...	Cased to 131 ft. Reported bail test, 7 gpm with 160 ft. of drawdown. See driller's log in table 5.
*S- 3	City of Ragland. ..	H. W. Peerson Drilling Supply Co.	D	406	6	IPpv	517	40	6- -53	T	P	..	11	98	Reported drawdown of 110 ft. after 24 hrs. pumping 100 gpm May 1953. Yield reported 35 gpm of clear water, 10-5-53. See driller's log in table 5.
S- 4	...do............	...do.........	D	300	6	IPpv	530	25	10-12-43	T	P	..	5	86	Cased to 20 ft. Reported yield, 20 gpm during dry season. See driller's log in table 5.
S- 5	...do............	....	D	200	6	IPpv	566	69.1	8-30-60	N	N	..	..	...	Cited as Town of Ragland well (Johnston, 1933, pt. 2, table 37, no. 33). Reported yield, 10 gpm in 1928. Supply became inadequate.
S- 6	...do............	National Cement Co.	D	350	4	IPpv	573	...	....	N	N	..	..	...	Supply became inadequate. Drilled through layer of coal.
*S- 7	...do............	H. W. Peerson Drilling Supply Co.	D	320	8	IPpv	488	6	12-28-55	T	P	64	7	62	Cased to 25 ft. Reported drawdown of 84 ft. after 24 hrs. pumping 110-130 gpm, 12-28-55. See sample log in table 4 and driller's log in table 5.
*S- 8	...do............	...do.........	D	305	8	IPpv	487	8	12- 7-55	T	P	..	11	28	Cased to 26.5 ft. Reported drawdown of 80 ft. after 24 hrs. pumping 90-100 gpm, 12-7-55. See sample log in table 4 and driller's log in table 5.

Table 3.— *Records of wells and springs in St. Clair County, Ala.*—Continued

Well or spring	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (°F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
S- 9	Lowell Mozley	W. C. Chapman.	D	110	6	ℙpv	569	+1.2	12- 8-60	F,J	D	61	2	156	Cased to 19 ft. Supplies 2 families and service station. Water contains excessive iron. Measured flow, 2 gallons per hour 12-8-60. Water enters well at 101 ft.
S-10	George Campbell ..	...do........	D	24.7	6	ℙpv	545	+.3	12- 8-60	F,J	N	61	2	58	Water contains excessive iron. Measured flow, 8 to 10 gallons per hour 12-8-60.
S-11	National Cement Co.	National Cement Co.	D	...	6	ℙpv	500	20	1959	T	I	..	..	...	Reported yield, 100 gpm. Supplementary supply used during extended droughts. Water reported to be unfit for drinking.
S-12	...do...........	...do.........	D	325	6	ℙpv	509	25	1959	T	I	69	9	180	Cased to 40 ft. Reported yield, 30 gpm. Supplementary supply used during extended droughts.

S-13	...do...........	...do.........	D	125	6	IPpv	511	..	....	T	I	69	2	116	Reported yield, 17 gpm. Reported small amount of natural gas discharges from well. Supplementary supply used during extended droughts.
S-14	Ragland Brick Co.	Virginia Well and Supply Co.	D	200	6	IPpv	521	20	1953	T	I	..	2	166	Cased to 79 ft. Supplies about 6,000 gpd for lime and clay mix. Reported drawdown of 130 ft. after 24 hrs. pumping 26 gpm. See driller's log in table 5.
S-15	Billie F. Shivers ..	W. C. Chapman.	D	155	6	Mf	513	38.3	10-12-60	J	D	..	14	236	Cased to 30 ft. Supplies 1 family and store; inadequate during dry season.
S-16	Marvin Daffy......	....	Du	36.8	30	Mf	547	23.9	12-14-60	M	D	59	4	12	Supplies 1 family.
V- 1	Viola Darrah......	....	D	75.1	6	Mf	517	10.7	9-29-60	M	D	63	131	2,870	Supplies 1 family. Water contains excessive iron.
V- 2	Viola Simmons	....	S	...	..	Mfm	475	...	....	F,J	D	61	4	154	Unnamed spring supplies 3 families. Measured flow, 60 gpm on 6-8-61.
V- 3	Stanley Sullivan...	Harvey M. Richardson.	D	95	6	OЄu	518	15.1	9-29-60	J	D	..	18	408	Cased to 18 ft. Supplies 2 families. Water contains some iron.
V- 4	E. L. Beasley.....	W. C. Chapman.	D	92	5	Mf	534	8.2	10- 4-60	J	D	..	4	242	Cased to about 12 ft. Supplies 1 family. Water contains some iron.

Table 3.—*Records of wells and springs in St. Clair County, Ala.*—Continued

Well or spring	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (°F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
V- 5	Robert Washington .	F. O. Pugh....	D	52	6	Mf	599	6.9	9-29-60	J	D	..	4	44	Cased to 21 ft. Supplies 2 families. Water contains excessive iron. Well equipped with water conditioner.
V- 6	G. W. Bannister ...	...do.........	D	67	8	OЄu	493	50.5	9-29-60	J	D	..	4	158	Supplies 1 family.
*V- 7	Coleman and Stewart Farms.	....	D	150	6	OЄu	481	48.2	9-29-60	J	D,S	..	0	116	Supplies 4 families, 27,000 chickens, egg washing room, and 300 cows.
V- 8	Riverside School ..	W. C. Chapman	D	100	6	OЄu	502	...	....	C	P	..	0	40	Supplies 25 students and 1 teacher.
V- 9	Avondale Mills....	....	S	...	..	Mfm	537	...	....	C	I	..	..	...	Known as Pump Station Spring. Reported yield, 200-400 gpm. Supplementary supply for mill.
V-10	Ledford Harmon ...	....	Du	27.0	36	OЄu	513	13.5	10- 4-60	M	D	67	28	222	Not cased. Supplies 1 family.
V-11	J. H. Bukacek.....	....	D	82.9	5	OЄu	474	40.4	10- 4-60	J	D	..	11	310	Supplies 1 family.
W- 1	Coal City Junior High School.	F. O. Pugh....	D	125	6	Mf	542	19.1	9-15-60	J	P	..	18	434	Supplies 127 students, 4 teachers, lunchroom, and bathrooms. Water contains excessive iron.

*W- 2	W. W. Crump	....	D	41	6	Mf	539	13.7	8-17-60	M	D	64	21	224	Cased to 20 ft. Supplies 2 families.
W- 3	Jack A. Franklin ..	F. O. Pugh	D	..	6	IPpv	568	27.2	10-14-60	J	D	..	32	72	Supplies 1 family. Water contains excessive iron; well equipped with water conditioner.
W- 4	W. E. Williams	....	D	40.7	6	IPpv	754	35.0	1-10-61	M	D	60	7	90	Cased to 48 ft. Small yield; supplies 1 family. Water contains excessive iron. Drilled through layer of coal.
W- 5	Miss Myrtle Stewart	W. C. Chapman.	D	40	6	IPpv	553	...	10-14-60	F,J	D	61	4	108	Cased to 21 ft. Supplies 1 family. Water contains excessive iron. Estimated flow, 5 gpm outside of casing on 10-14-60.
W- 6	Mrs. Faye Prather..	...do.........	D	91	6	Mf	587	13.6	9-15-60	J	D	..	7	212	Cased to 42 ft. Supplies 3 families.
W- 7	J. T. Dillard......	....	D	...	6	Mf	603	13.7	9-15-60	J	D	..	4	44	Supplies 1 family. Water contains excessive iron; unfit for washing and cooking.
*W- 8	Town of Pell City .	....	S	...	..	Mfm	535	...	....	C	P	59	4	136	Known as Hinesman Spring. Reported average withdrawal, 235 gpm for 16 hrs. per day. Supply inadequate; supplemental supply obtained from spring BB-12.
W- 9	James Mize.......	--Cole........	D	75	6	IPpv	549	9.3	1-10-61	J	D	..	7	30	Supplies 2 families. Water contains excessive iron; well equipped with water conditioner.

Table 3.–*Records of wells and springs in St. Clair County, Ala.*–Continued

Well or spring	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (°F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
W-10	Mrs. Maze Jones...	....	D	104.3	6	IPpv	653	11.5	1-11-61	N	N	..	..	...	
W-11	L. B. Kirby.......	W. C. Chapman.	D	52	6	IPpv	762	25.8	1-11-61	J	D	..	11	10	Cased to 20 ft. Supplies 1 family; inadequate during dry season. Water contains excessive iron.
W-12	--Starnes.........	....	D	...	6	IPpv	627	32.1	1-12-61	J	D	..	4	56	Supplies 1 family. Water contains excessive iron.
W-13	W. R. Richey......	....	D	34.5	6	Mf (?)	532	8.4	1-10-61	J	D	..	11	16	Do.
W-14	Avondale Mills....	H. W. Peerson Drilling Supply Co.	D	247	6	Mf	565	....	....	N	N	..	..	...	Avondale test well 2. Estimated yield, 2 gpm. Abandoned. See driller's log in table 5.
W-15	...do...........	...do.........	D	575	6	Mf	566	....	....	N	N	..	..	...	Avondale test well 1. Yield 2 gpm. Abandoned. See driller's log in table 5.
W-16	...do...........	...do.........	D	307	6	Mf	566	....	....	N	N	..	..	...	Avondale test well 5. Well tested at 30 gpm. Abandoned. See driller's log in table 5.
X- 1	A. V. Densmore ...	J. H. Beard....	D	81	6	Ool	734	46.4	1-10-61	J	D	..	11	294	Cased to 81 ft. Supplies 1 family.

X- 2	W. D. Hosley.....	....	S	...	..	O€u	790	....	....	F	P	61	5	98	Cited as Town Spring (Johnston, 1933, pt. 2, table 38, no. 63). Supplies 25-30 families in Branchville by gravity flow. Measured flow, 75 gpm on 10-8-28 and 80 gpm on 6-7-61.
X- 3	Roy E. Vann......	T. W. Cole & Son, Well Drillers.	D	62	6	ℙpv	748	22.7	12-27-60	M	D	61	11	190	Cased to 25 ft. Supplies 1 family. 4-in. layer of coal at 17 ft.
X- 4	Dr. E. H. Edwards.	...do.........	D	67	6	ℙpv	718	32.5	12-27-60	J	D,S	..	11	14	Cased to 42 ft. Supplies 1 family and 36 head of stock. Reported 30-in. layer of coal at about 35 ft.
X- 5	J. W. Hodges......	....	D	111	6	Ool	772	83.4	1-10-61	J	D	..	4	42	Cased to 111 ft. Supplies 2 families.
X- 6	J. D. Cobb........	....	D	25.8	6	Olm	731	10.4	10-10-60	M	N	63	4	164	
*X- 7	M. S. Riddle	C. E. Wilks....	D	87	6	Olm	744	5.7	10-10-60	M	D	69	4	124	Cased to 42 ft. Supplies 1 family. Becomes muddy after rains.
X- 8	W. F. Roberson....	....	D	115	6	Mf	838	40-55	1959	J	D	..	4	152	Supplies 1 family. Water contains excessive iron.
X- 9	Herbert Hardwick..	C. E. Wilks....	D	100	6	Ool	720	30	7- -57	J	D	..	7	14	Cased to 100 ft. Supplies 3 families.
X-10	Emmett Coupland..	Hoyt Dalrymple	D	84	6	Ool	710	10.0	1-11-61	J	D	..	2	174	Cased to 21 ft. Supplies 2 families. Bedrock at 20 ft. and a cavity at 80 ft.
X-11	James Brasher	....	Du	20.5	30	ℙpv	587	15.0	1-11-61	M	D	60	4	14	Supplies 1 family; inadequate during dry season.
X-12	J. R. Brunson.....	J. H. Beard....	D	200	6	Dfm, Olm	799	111.5	1-11-61	S	D	..	4	120	Supplies 1 family.

Table 3.–*Records of wells and springs in St. Clair County, Ala.*–Continued

Well or spring	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (°F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
X-13	J. R. Brunson.....	....	D	53.4	6	Olm	716	16.9	1-11-61	N	N	..	..	...	
X-14	W. J. Taylor......	....	D	95	6	Olm	693	13.9	1-17-61	J	D	..	7	122	Supplies 1 family.
X-15	Paul Eves........	....	D	70	6	Mf	711	11.4	1-11-61	N	N	..	..	...	Water has high iron content and is unsatisfactory for domestic use.
X-16	Lewis Polk.......	....	D	...	6	ℙpv	623	37.8	1-11-61	J	D	..	4	62	Supplies 1 family. Water contains excessive iron.
X-17	John Hannah......	Arthur Roberts .	D	62	6	ℙpv	696	39.1	1-12-61	J	D	..	4	34	Cased to 55 ft. Supplies 1 family; inadequate during dry season. Water contains excessive iron; well equipped with water conditioner.
X-18	....	Alabama Fuel and Iron Co.	D	1,000 (?)	2½	ℙpv	719	....	....	F	N	61	..	...	Drilled to explore coal. Estimated flow, 5 gpm 5-4-62.
Y- 1	Ed Roper.........	--Morris	D	103	6	ℙpv	632	41.2	1-17-61	N	N	..	..	...	Water contains excessive iron.
Y- 2	...do............	--Stone	D	150	6	ℙpv	632	45	1960	C	D	..	4	88	Cased to 18 ft. Supplies 3 families.
Y- 3	T. L. Taylor......	....	D	55.1	6	ℙpv	689	43.3	1-17-61	N	N	..	..	...	Water is reported to contain excessive iron.

Y- 4	Mrs. Louise Webb .	W. C. Chapman.	D	111.1	6	ℙpv	707	103.2	1-17-61	N	N	..	..	...	Drilled to a depth of 163 ft. Water contains excessive iron.
Y- 5	C. E. James......	....	S	...	..	O€u	636	...	....	F,C	P	..	5	160	Known as Braggsville Spring. Reported yield, 20-40 gpm. Supplies Acmar with 22,000 gpd.
Y- 6	Moody School.....	W. C. Chapman.	D	127	6	O€u	727	70	12- -60	J	P	--	11	142	Moody School well no. 1. Supplies 415 students and 15 teachers.
Y- 7	...do............	H. W. Peerson Drilling Supply Co.	D	319	6	O€u	734	81	12- -60	S	N	..	..	...	Moody School well no 2. Cased to 110 ft. Reported yield, 8 gpm at 81 ft.
Z- 1	Mrs. Mavis D. Cross.	....	D	95	6	Olm	683	35	1952	J	D	..	35	212	Cited as the A. J. Copeland well (Johnston, 1933, pt. 2, table 37, no. 47). Supplies 1 family. Water level of 31.8 ft. on 10-8-28.
Z- 2	--Lollars........	....	D	35.6	6	Ool	662	3.3	1-23-61	J	D	..	7	168	Supplies 2 families.
Z- 3	C. E. James......	....	S	...	..	O€u	614	....	....	F,C	P	..	4	212	Known as Markeeta Spring. Reported yield, 8-20 gpm. Supplies Markeeta with 8,000 gpd.
Z- 4	Mrs. Bert Little...	....	D	124	6	Ool	637	7.9	1-23-61	N	N	..	..	...	Cased to 10 ft. Bedrock at 4 ft.
Z- 5	C. E. Malone	....	D	60	6	Mf	740	15.9	1-23-61	J	D	..	2	134	Supplies 2 families.
Z- 6	G. D. Whitfield....	T. W. Cole & Son, Well Drillers.	D	86	6	Mf	735	7.1	1-23-61	J	D	..	..	...	Cased to 86 ft. Supplies 1 family and service station. Water contains excessive iron; well equipped with water conditioner.
Z- 7	City of Leeds.....	....	S	...	..	Olm	648	....	....	F,C	P	62	5	136	Estimated flow, 400 gpm on 6-7-61. Supplies the city of Leeds with 320,000 gpd.

Table 3.—*Records of wells and springs in St. Clair County, Ala.*—Continued

Well or spring	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (°F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
AA- 1	F. L. Keahey.....	W. C. Chapman	D	75	6	ℙpv	563	19.2	1-12-61	J	D	..	4	98	Supplies 2 families. Water contains slight amount of iron.
AA- 2	John W. McDaniel.	...do........	D	107	6	Mf	734	43.4	1-11-61	J	D	..	4	14	Cased to 107 ft. Supplies 1 family. Water contains excessive iron.
AA- 3	C. D. Salmon.....	E. L. Graves..	D	72	6	ℙpv	603	43.2	1-12-61	J	D	..	4	74	Cased to 12 ft. Supplies 1 family.
AA- 4	St. Clair Nursing Home.	...do........	D	124	6	ℙpv	557	36.6	1-12-61	J	P	..	4	116	Supplies water for laundry, kitchen, steam heating, and 70 people. Water contains excessive iron.
AA- 5	Camp Winnataska.	H. W. Peerson Drilling Supply Co.	D	210	6	ℙpv	565	....	....	J	P	..	2	38	Well no. 2.
AA- 6	...do..........	...do........	D	186.1	6	ℙpv	519	6.2	1-12-61	N	N	..	..	...	Well no. 3, near mud hut. Abandoned, insufficient supply.
AA- 7	...do..........	...do........	D	200	6	ℙpv	523	40.8	1-12-61	J	P	..	..	...	Well no. 4, near mess hall. Cased to 14½ feet. Reported yield, 18 gpm and a water level of 18 ft. on 5-26-47. See driller's log in table 5.

AA- 8	...do...........	...do........	D	210	6	IPpv	563	....	....	C	P	..	..	...	Well no. 1. See driller's log in table 5.
AA- 9	...do...........	...do........	D	210	6	IPpv	548	....	....	J	P	..	..	...	Well no. 6, rear of chapel.
AA-10	...do...........	...do........	D	125	6	IPpv	536	50	3-17-57	C	P	..	2	58	Well no. 5, near lake. Cased to 48½ ft. Reported yield, 24 gpm on 3-17-57. See driller's log in table 5.
AA-11	Mrs. W. C. Partridge.	W. C. Chapman	D	55	6	Mf	472	8.8	2-10-61	J	D	..	7	52	Cased to 20 ft. Supplies 1 family. Water contains excessive iron. Bail tested at 7 gpm in 1958.
AA-12	Mrs. Nancy Wilkerson.	...do........	D	150	6	Mf	485	6.2	2-10-61	J	D	..	..	...	Supplies 1 family. Water contains excessive iron; well equipped with water conditioner.
AA-13	R. F. Partridge ...	W. H. Bland...	D	65	6	Mf	492	12.9	2-10-61	J	D	..	14	132	Supplies 1 family. Water contains excessive iron.
AA-14	W. C. Allen	....	Du	29.6	30	Mf	518	19.7	2-10-61	M	D	59	2	30	Supplies 1 family; inadequate during dry season.
BB- 1	Avondale Mills ...	H. W. Peerson Drilling Supply Co.	D	250	6	Mf	552	15	5- -46	N	N	..	..	...	Avondale test well 4 drilled in March 1942. Air-lift test, 150 gpm for 48 hrs.; yield reduced later to less than 5 gpm. Well plugged. See driller's log in table 5.
BB- 2	...do...........	...do........	D	209	10	Mf	548	2.8	8-15-60	N	N	..	..	...	Avondale test well 3 drilled in February 1942. Air-lift test, 200-250 gpm for 120 hrs. with 30-40 ft. drawdown. Abandoned because of surface sinks. See figure 6 and driller's log in table 5.

Table 3.–*Records of wells and springs in St. Clair County, Ala.*–Continued

Well or spring	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (°F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
*BB-3	E. R. Blair.......	H. W. Peerson Drilling Supply Co.	D	300	8	Mf	523	2.9	8-18-60	N	N	..	..	...	Cased to 40 ft. Former supply for town of Eden. Measured drawdown, 157 ft. after 24 hrs. pumping 26 gpm on 2-25-46. See sample log in table 4 and driller's log in table 5.
BB- 4	A. B. Griffin	W. C. Chapman	D	90	6	Mf	518	7.6	2-10-61	J	D	59	4	180	Cased to 28 ft. Supplies 1 family. Reported drawdown, 20 ft. after ½ hr. bailing 20 gpm in 1959.
BB- 5	G. C. Walker	....	D	65	6	Mf	521	2.7	2-10-61	N	N	..	..	...	Supply adequate for 1 family. Water contains excessive iron.
BB- 6	....	....	S	...	..	OЄu	468	...	....	F	S	..	..	...	Known as Blue Spring. Estimated flow, 300 gpm on 8-16-60.
BB- 7	Texas Smith......	....	Du	23.0	30	Mf	535	12.9	2-14-61	M	D	58	7	56	Not cased. Supplies 2 families; inadequate during dry season. Water contains excessive iron.

BB- 8	Mrs. John Goddard	....	D	80	6	Mf	521	11.5	2-10-61	J	D	..	18	170	Cased to 20 ft. Supplies 1 family. Water contains excessive iron. Water enters at 40 ft.
BB- 9	Fred Castleberry . .	W. H. Bland. . .	D	75	6	Mf	503	5.6	2-10-61	J	D	..	7	138	Supplies 1 family. Water contains excessive iron.
BB-10	Max Smith.	....	Du	25.5	36	O€u	530	3.7	4-17-61	J	D	57	..	...	Not cased. Supplies 2 families.
BB-11	S. F. Johnson	....	Du	30.2	36	Mf	538	20.5	2-14-61	J	D	..	67	798	Not cased. Mineralized water, unfit for drinking and cooking.
BB-12	Avondale Mills . . .	....	S	...	..	O€u	436	...	....	F,C	D,I, P,S	62	..	...	Known as Waite Spring. Estimated flow, 800 gpm on 8-16-60. Supplies about 250,000 gallons per day for mill and supplemental supply for Pell City. The spring will become flooded upon completion of a dam on the Coosa River near Kelly Creek.
CC- 1	Lester Dickey. . . .	F. O. Pugh . . .	D	99	6	O€u	520	36.0	4-17-61	J	D	..	4	100	Cased to 61 ft. Supplies 1 family.
CC- 2	Mrs. Bobbie Sue Fraim.	....	D	66.3	6	O€u	523	21.7	3-23-61	N	N	..	..	...	
CC- 3	Joe E. Yates	....	D	...	6	O€u	495	13.6	3-27-61	J	D,S	..	7	98	Supplies 1 family and 1,200 chickens.
CC- 4	Greenfield School .	F. O. Pugh . . .	D	...	6	O€u	503	...	....	C	P	..	4	70	Supplies 113 students and 3 teachers.
CC- 5	Turner Thunderbird.	....	D	90	6	O€u	531	23.7	3-27-61	J	N	..	..	...	
CC- 6	Warren Lee.	....	D	...	6	O€u	456	25.7	3-23-61	J	D	..	35	28	Supplies 1 family.

Table 3.–*Records of wells and springs in St. Clair County, Ala.*–Continued

Well or spring	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (°F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
CC- 7	Mrs. Bobbie Sue Fraim.	Alabama-Pennsylvania Drilling Co.	D	..	6	OЄu	468	...	....	J	D	..	4	184	Supplies 1 family. Bail tested at 20 gpm in 1956.
CC- 8	Thomas H. Wilson.	Abernathy Drilling Co.	D	147	6	OЄu	503	72.4	3-27-61	T	D	..	4	136	Supplies 3 families.
EE- 1	Edward J. Walker..	Arthur Roberts.	D	40	6	OЄu	482	3.5	3-27-61	J	D	..	7	92	Supplies 1 family and service station.
EE- 2	Leslie F. Broadus	....	Du	11.4	24	Mf	519	3.4	2-14-61	M	D	59	67	96	Supplies 1 family all year and several families during summer. Dug about 1928.
EE- 3	Sam Smith Estate..	....	D	166.9	6	Ool	508	38.6	2-14-61	J	N	..	..	...	
EE- 4	E. C. Martin......	....	Du	49.5	24	OЄu	501	12.1	2-14-61	M	D	60	18	20	Lined with rock. Supplies 1 family.
EE- 5	Albert Perry......	F. O. Pugh....	D	91	6	OЄu	499	42.7	3-23-61	J	D	..	4	46	Supplies 1 family.
EE- 6	Frank Lacey, Jr...	....	Du	44.2	42	OЄu	456	6.5	3-23-61	J	D	58	7	44	Not cased. Supplies 1 family.
EE- 7	Ernest Williamson.	....	Du	26.3	48	OЄu	439	5.5	3-23-61	J	D	..	21	36	Supplies 1 family; inadequate during dry season.
EE- 8	J. W. Goodgame...	Alabama-Pennsylvania Drilling Co.	D	120	6	Ool	468	29.4	2-14-61	J	D,I	..	2	104	Supplies 1 family, 2 service stations, and cafe.
EE- 9	Leslie Beavers...	....	D	...	6	Ool	464	47.7	2-14-61	C	D	..	2	130	Supplies 1 family.
EE-10	David Treadwell..	W. C. Chapman.	D	84	6	OЄu	463	56.5	3-27-61	J	D,S	..	4	48	Cased to 80 ft. Supplies 2 families and 200 hogs.

Table 4.—*Sample logs of wells in St. Clair County, Ala.*

	Thickness		Depth	
	feet	inches	feet	inches
Well R-5[1]				
Owner: Chester Savage Driller: Pennsylvania Drilling Co.				
Weathered rock	6	0	6	0
Silty weathered claystone	6	0	12	0
Siltstone and claystone	5	0	17	0
Shaly and silty claystone; dip 15°-20°	6	6	23	6
Coal (no core recovered). Gann coal bed	0	10	24	4
Thin-bedded siltstone with sandy zones; dip 20°	21	8	46	0
Sandstone with streaks of pyrite and carbonized plant fragments	0	6	46	6
Siltstone (25 in. core recovered, mostly clay)	0	4	46	10
Bony coal Higginbotham coal bed	0	3	47	1
Broken coal	0	4	47	5
Bony coal	0	2	47	7
Claystone	1	5	49	0
Carbonaceous claystone	0	10	49	10
Claystone with sandy streaks	0	11	50	9
Claystone with sandy streaks	0	9	51	6
Silty claystone	1	1	52	7
Sandstone; streaks of coal at 56 ft. 9 in. and 65 ft. 6 in.	13	2	65	9
Shale and sandstone	1	0	66	9
Medium-grained sandstone with occasional shale fragments and carbonaceous partings	16	3	83	0
Sandstone; many clay pellets and fragments of ferruginous concretions and fossil plants	3	0	86	0
Medium-grained sandstone	19	0	105	0
Claystone	5	10	110	10
Coal (5½ in. core recovered) Fairview coal bed (adjusted to conform to the laboratory analysis)	1	8	112	6
Clay and coal (12½ in. core recovered)	0	7	113	1
Coal, thin clay partings	1	1	114	2
Clay, streaks of coal	0	7	114	9
Carbonaceous claystone; streak of coal near base	0	6	115	3
Carbonaceous slickensided claystone	2	0	117	3
Claystone	1	9	119	0
Thin-bedded shaly siltstone with lenticular sandy partings	21	6	140	6
Shaly claystone	10	0	150	6
Fine-grained sandstone	16	0	166	6
Clayey siltstone with lenticular sandy partings	25	6	192	0
Sandstone	10	4	202	4

Table 4.—*Sample logs of wells in St. Clair County, Ala.*—Continued

	Thickness		Depth	
	feet	inches	feet	inches
Well R-5—Continued				
Shaly claystone with scattered sandy partings	11	2	213	6
Thin-bedded sandstone and shale	23	0	236	6
Medium-grained sandstone with fragments of ferruginous concretions in the top and bottom	5	6	242	0
Shaly claystone, sandy at base	12	0	254	0
Sandstone with occasional silty partings and pellets of claystone	10	0	264	0
Claystone	1	6	265	6
Siltstone	1	6	267	0
Shaly claystone with scattered ferruginous concretions	11	10	278	10
Coal, with thin clayey partings (9 in. core recovered) } New coal bed	1	4	280	2
Clay and coal (no coal recovered) } New coal bed	0	2	280	4
Shaly claystone with scattered streaks of sand and ferruginous concretions; slickensides at 305 ft.	30	8	311	0
Sandstone with scattered claystone pellets	5	0	316	0
Shaly claystone	9	0	325	0
Shale with sandy partings	6	0	331	0
Sandstone with shaly partings in the lower 3 ft.	14	0	345	0
Shaly claystone with sandy lenticular partings; scattered ferruginous concretions	48	0	393	0
Thin-bedded sandstone with silty partings	8	0	401	0
Thin-bedded claystone and sandstone	16	0	417	0
Shaly claystone; ferruginous concretions; sandy partings in middle and bottom	16	6	433	6
Thin-bedded claystone and sandstone	9	6	443	0
Shaly claystone; ferruginous concretions and scattered silty partings	13	6	456	6
Coal (12 in. core recovered) Upper Chapman coal bed	1	4	457	10
Claystone	13	2	471	0
Thin-bedded siltstone	6	6	477	6
Fine-grained thick-bedded sandstone with scattered claystone partings	57	0	534	6
Shaly claystone, silty in the lower part	23	11	558	5
Coal Lower Chapman coal bed	0	7	559	0
Clay	0	1	559	1
Clay and coal	0	4	559	5
Claystone	1	7	561	0
Siltstone	2	0	563	0

Total depth 563 feet.

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[1] Log of core drill hole (Rothrock, 1949, p. 117-119)

Table 4.—*Sample logs of wells in St. Clair County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well S-7		
Owner: Town of Ragland Driller: H. W. Peerson Drilling Supply Co.		
Pottsville Formation		
No record	10	10
Shale, dark-gray; moderate brown fine-grained ferruginous sandstone	10	20
Shale, dark-gray, sandy	15	35
Shale, dark-gray; ferruginous concretions	5	40
Shale, dark-gray, sandy, soft	20	60
Sandstone, light greenish-gray, very fine grained; dark-gray shale	40	100
Shale, dark-gray, slightly carbonaceous, slickensided; light greenish-gray very fine grained sandstone	5	105
Sandstone, light brownish-gray, fine-grained, ferruginous; dark-gray shale	5	110
Sandstone, light greenish-gray, fine-grained; dark-gray slickensided shale	5	115
Shale, dark-gray	15	130
Shale, dark-gray; light greenish-gray very fine grained sandstone	10	140
Shale, dark-gray; sandy clay	20	160
Shale, dark-gray; light greenish-gray siltstone	10	170
Shale, dark-gray; sandy clay	5	175
Shale, dark-gray; light greenish-gray very fine grained sandstone	5	180
Siltstone, light brownish-gray, pyritiferous; dark-gray shale	5	185
Sandstone, light greenish-gray, fine-grained; dark-gray shale	5	190
Shale, dark-gray; coal	15	205
Shale, dark-gray; olive-green siltstone; coal	10	215
Shale, grayish-black, carbonaceous, slickensided	5	220
Siltstone, dark-gray, hard	15	235
Shale, dark-gray, hard	10	245
Shale, grayish-black, carbonaceous; coal	15	260
Siltstone, dark-gray; dark-gray shale	5	265
Sandstone, light greenish-gray, fine- to medium-grained, weathering to sand; gray shale; coal	15	280
Sandstone, light greenish-gray, fine- to medium-grained, weathering to sand	20	300
Sandstone, light greenish-gray, very fine grained; medium dark-gray shale	10	310
Shale, dark-gray	5	315
Shale, dark-gray; medium-gray siltstone	5	320

Table 4.—*Sample logs of wells in St. Clair County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well S-8 Owner: Town of Ragland Driller: H. W. Peerson Drilling Supply Co.		
Pottsville Formation		
No sample	10	10
Shale, medium-gray; very thin layer limonite	20	30
Shale, dark-gray	10	40
Shale, medium dark-gray, ferruginous	5	45
Shale, medium dark-gray; medium-gray fine-grained sandstone	15	60
Shale, dark-gray; medium-gray fine-grained hard sandstone	10	70
Shale, dark-gray; light-gray fine-grained sandstone	5	75
Sandstone, light-gray, fine- to medium- grained; medium-gray hard shale	5	80
Shale, dark-gray; light-gray sandy clay	15	95
Shale, dark-gray	10	105
Shale, dark-gray; medium-gray fine-grained sandstone	10	115
Sandstone, light-gray, very fine to fine-grained; dark-gray shale; light-gray sandy clay	5	120
Sandstone, light- to medium-gray, very fine to fine-grained, pyritiferous, ferruginous; dark-gray shale	5	125
Shale, medium dark-gray; coal	5	130
Sandstone, medium-gray, very fine to fine-grained; very thin layers of limonite	5	135
Shale, dark-gray; medium-gray very fine grained sandstone	5	140
Shale, dark-gray	5	145
Sandstone, medium-gray, very fine grained	5	150
Shale, dark-gray; medium-gray very fine grained sandstone	10	160
Shale, dark-gray; medium-gray fine-grained sandstone; calcite	10	170
Shale, dark-gray; calcite	10	180
Shale, dark-gray; coal	10	190
Shale, dark-gray; very light gray sandy clay	25	215
Shale, medium-gray	5	220
Shale, medium dark-gray; medium-gray sandstone; calcite	5	225
Shale, medium-gray; calcite	10	235
Shale, dark-gray, hard	25	260
Shale, grayish-black, hard	15	275
Shale, dark-gray; coal	10	285
Shale, dark-gray	20	305

Table 4.—*Sample logs of wells in St. Clair County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well BB-3		
Owner: E. R. Blair		
Driller: H. W. Peerson Drilling Supply Co.		
Floyd Shale		
Soil, dark	5	5
Shale, grayish-black, micaceous, hard, with thin calcite veins	35	40
Shale, grayish-black, micaceous, contains pyrite, calcite, and flint particles	70	110
Shale, grayish-black, contains pyrite, calcite, and thin veins of calcite	35	145
No samples	155	300

Table 5.—*Drillers' logs of wells in St. Clair County, Ala.*

	Thickness (feet)	Depth (feet)
Well C-3		
Owner: Paul Jones		
Driller: Bureau of Mines		
Sand and clay, unconsolidated	56	56
Limestone	71	127
Chert	224	351
Shale	23	374
(no log from 374 ft. to 875 ft.)		
Well C-5		
Owner: Camp Sumatanga		
Driller: C. R. Killian		
Clay, orange, sandy, soft	15	15
Boulder, orange, hard	3	18
Limestone, blue, hard	21	39
Shale, blue, soft (water, approximately 4 gpm)	7	46
Limestone, blue, hard	3	49
Shale, blue, soft	4.5	53.5
Sandstone, gray, hard	2.5	56

Table 4.—*Sample logs of wells in St. Clair County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well S-8		
Owner: Town of Ragland Driller: H. W. Peerson Drilling Supply Co.		
Pottsville Formation		
No sample	10	10
Shale, medium-gray; very thin layer limonite	20	30
Shale, dark-gray	10	40
Shale, medium dark-gray, ferruginous	5	45
Shale, medium dark-gray; medium-gray fine-grained sandstone	15	60
Shale, dark-gray; medium-gray fine-grained hard sandstone	10	70
Shale, dark-gray; light-gray fine-grained sandstone	5	75
Sandstone, light-gray, fine- to medium- grained; medium-gray hard shale	5	80
Shale, dark-gray; light-gray sandy clay	15	95
Shale, dark-gray	10	105
Shale, dark-gray; medium-gray fine-grained sandstone	10	115
Sandstone, light-gray, very fine to fine-grained; dark-gray shale; light-gray sandy clay	5	120
Sandstone, light- to medium-gray, very fine to fine-grained, pyritiferous, ferruginous; dark-gray shale	5	125
Shale, medium dark-gray; coal	5	130
Sandstone, medium-gray, very fine to fine-grained; very thin layers of limonite	5	135
Shale, dark-gray; medium-gray very fine grained sandstone	5	140
Shale, dark-gray	5	145
Sandstone, medium-gray, very fine grained	5	150
Shale, dark-gray; medium-gray very fine grained sandstone	10	160
Shale, dark-gray; medium-gray fine-grained sandstone; calcite	10	170
Shale, dark-gray; calcite	10	180
Shale, dark-gray; coal	10	190
Shale, dark-gray; very light gray sandy clay	25	215
Shale, medium-gray	5	220
Shale, medium dark-gray; medium-gray sandstone; calcite	5	225
Shale, medium-gray; calcite	10	235
Shale, dark-gray, hard	25	260
Shale, grayish-black, hard	15	275
Shale, dark-gray; coal	10	285
Shale, dark-gray	20	305

Table 4.—*Sample logs of wells in St. Clair County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well BB-3		
Owner: E. R. Blair Driller: H. W. Peerson Drilling Supply Co.		
Floyd Shale		
Soil, dark	5	5
Shale, grayish-black, micaceous, hard, with thin calcite veins	35	40
Shale, grayish-black, micaceous, contains pyrite, calcite, and flint particles	70	110
Shale, grayish-black, contains pyrite, calcite, and thin veins of calcite	35	145
No samples	155	300

Table 5.—*Drillers' logs of wells in St. Clair County, Ala.*

	Thickness (feet)	Depth (feet)
Well C-3		
Owner: Paul Jones Driller: Bureau of Mines		
Sand and clay, unconsolidated	56	56
Limestone	71	127
Chert	224	351
Shale	23	374
(no log from 374 ft. to 875 ft.)		
Well C-5		
Owner: Camp Sumatanga Driller: C. R. Killian		
Clay, orange, sandy, soft	15	15
Boulder, orange, hard	3	18
Limestone, blue, hard	21	39
Shale, blue, soft (water, approximately 4 gpm)	7	46
Limestone, blue, hard	3	49
Shale, blue, soft	4.5	53.5
Sandstone, gray, hard	2.5	56

Table 5.—*Drillers' logs of wells in St. Clair County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well C-5—Continued		
Shale, blue, medium hard	6.5	62.5
Sandstone, gray, hard	67.5	130
Sandstone, brown, very hard	19	149
Shale, blue, hard	67	216
Limestone, gray, hard (pumped at 65 gpm with drawdown of 4 feet)	50	266
Limestone, gray, hard	15	281
Well J-14		
Owner: Hughie Echols Driller: W. C. Chapman		
Soil	20	20
Shale, gray	40	60
Sandstone, blue	41	101
Well S-2		
Owner: Ragland Brick Co. Driller: Virginia Well and Supply Co.		
Shale, brown	10	10
Coal	2	12
Shale, blue	8	20
Shale, blue	50	70
Shale, blue and clay balls	45	115
Clay, gray	2	117
Shale, blue and clay balls	8	125
Shale, blue	45	170
Shale, blue and clay balls	37	207
Shale, blue	120	327
Limestone	25	352
Shale, blue	27	379
Well S-3		
Owner: Town of Ragland Driller: H. W. Peerson Drilling Supply Co.		
Clay, yellow, sticky	5	5
Shale	17	22

Table 5.–*Drillers' logs of wells in St. Clair County, Ala.*–Continued

	Thickness (feet)	Depth (feet)
Well S-3–Continued		
Shale, sandy (water at 64 ft.)	80	102
Shale, sandy	27	129
Shale	25	154
Shale, hard	31	185
Shale (water level rose from 60 to 42 ft.)	31	216
Shale	27	243
Shale, hard	2	245
Shale, sandy, hard	11	256
Shale, hard	10	266
?	50	316
Shale	34	350
Sandstone, blue	15	365
Sandstone	5	370
Sand, blue	6	376
Sandstone and shale	30	406

Well S-4

Owner: Town of Ragland
Driller: H. W. Peerson Drilling Supply Co.

	Thickness (feet)	Depth (feet)
Clay	10	10
Shale, blue	15	25
Shale	23	48
Sandstone (water at 45-51 ft.)	3	51
Shale, sandy	49	100
Shale and sandstone (more water)	5	105
Shale	20	125
Sandstone, hard	22	147
Shale	10	157
Sandstone, hard	2	159
Shale, sandy	33	192
Sandstone, hard	18	210
Sandstone	8	218
Sandstone, hard	12	230
Shale, sandy (more water)	10	240
Shale	35	275
Shale, sandy	25	300

Table 5.–*Drillers' logs of wells in St. Clair County, Ala.*–Continued

	Thickness (feet)	Depth (feet)
Well S-7		
Owner: Town of Ragland Driller: H. W. Peerson Drilling Supply Co.		
Clay	11	11
Shale, sandy, hard (water at 15 ft.)	44	55
Shale, gummy	5	60
Shale, sandy, hard, soft streaks 95-100 ft.	65	125
Shale, soft (more water; water level rose from 18 to 8 ft.)	15	140
Shale, sandy, hard (bailer test for 30 minutes at a depth of 170 ft. Could not lower water level below 18 ft.)	40	180
Shale, soft	20	200
Shale, sandy, hard	10	210
Shale, soft	45	255
Shale, sandy, hard	45	300
Sandstone	5	305
Shale (bailer test for 45 minutes and could not lower water level below 18 ft.)	15	320
Static water level 6 ft.		
Well S-8		
Owner: Town of Ragland Driller: H. W. Peerson Drilling Supply Co.		
Clay	8	8
Shale (water at 18-20 ft. and 38-40 ft.)	107	115
Sandstone	10	125
Shale, sandy, hard	55	180
Shale, sandy, soft streak at 235-245 ft. (bailer test at 40-50 gpm for 45 minutes with drawdown of 17 ft.)	125	305
Static water level 8 ft.		
Well S-14		
Owner: Ragland Brick Co. Driller: Virginia Well and Supply Co.		
Shale and clay, brown	15	15
Shale and clay, blue	11	26
Shale and clay, blue	4	30
Shale, blue	10	40
Shale and clay, blue	20	60

Table 5.—*Drillers' logs of wells in St. Clair County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well S-14—Continued		
Shale, blue	60	120
Shale and clay, blue	16	136
Sandstone	4	140
Shale, blue	10	150
Shale and clay, blue	10	160
Shale and clay, blue	40	200
Well W-14		
Owner: Avondale Mills Driller: H. W. Peerson Drilling Supply Co.		
Clay	10	10
Shale	26	36
Limestone, hard	3	39
Shale	56	95
Limestone and chert	4	99
Limestone boulders	2	101
Limestone	5	106
Shale	29	135
Shale, hard with chert	14	149
Limestone, blue	10	159
Shale and limestone, hard	20	179
Limestone, blue	11	190
Shale, soft	3	193
Shale and limestone, very hard	8	201
Limestone, blue	9	210
Limestone and chert, hard	16	226
Limestone	21	247
Well W-15		
Owner: Avondale Mills Driller: H. W. Peerson Drilling Supply Co.		
Clay, yellow	5	5
Shale	166	171
Shale, sandy	89	260
Shale and limestone	167	427
Limestone, hard	37	464
Crevice	0.5	464.5
Limestone and flint, very hard	15.5	480

Table 5.—*Drillers' logs of wells in St. Clair County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well W-15—Continued		
Crevice	1	481
Limestone	5	486
Crevice	1	487
Limestone	10	497
Crevice	1	498
Limestone, test showed 2 gpm	5	503
Limestone, porous shelly streak	6	509
Limestone, hard and solid	66	575
Well W-16		
Owner: Avondale Mills Driller: H. W. Peerson Drilling Supply Co.		
Clay, yellow	18	18
Boulders	6	24
Limestone, solid	39	63
Limestone, soft streaks	18	81
Limestone, solid	21	102
Shale, solid	205	307
Well AA-7		
Owner: Camp Winnataska Driller: H. W. Peerson Drilling Supply Co.		
Shale, sandy	8	8
Clay, sandy	1	9
Sand, hard	9	18
Sandstone, gray	42	60
Shale, sandy	38	98
Sandstone, gray	20	118
Shale, sandy	27	145
Sandstone, gray	43	188
Shale, sandy	12	200

Table 5.—*Drillers' logs of wells in St. Clair County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well AA-8		
Owner: Camp Winnataska		
Driller: H. W. Peerson Drilling Supply Co.		
Clay and sandstone	25	25
Sandstone	25	50
Shale	20	70
Sandstone	30	100
Shale	15	115
Shale, sandy	17	132
Shale	15	147
Sandstone, hard	11	158
Sandstone	10	168
(No log from 168 ft. to 210 ft.)		
Well AA-10		
Owner: Camp Winnataska		
Driller: H. W. Peerson Drilling Supply Co.		
Clay and sand, red	10	10
Clay and sand, yellow	9	19
Boulder	1	20
Clay	7	27
Gravel with clay	8	35
Shale, hard	19	54
Shale	37	91
Shale, sandy	8	99
Sand with little shale	12	111
Sand, blue	14	125
Well BB-1		
Owner: Avondale Mills		
Driller: H. W. Peerson Drilling Supply Co.		
Clay, yellow, sticky	12	12
Clay, yellow with boulders	9	21
Clay, yellow with boulders, some water	5	26
Limestone and chert boulders with clay	2	28
Limestone	6	34
Limestone, honeycomb, and mud	1	35
Chert and limestone	5	40
Chert, hard	16	56

Table 5.—*Drillers' logs of wells in St. Clair County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well BB-1—Continued		
Limestone, honeycomb, and mud	10	66
Limestone, and chert	9	75
Limestone, hard	20	95
Limestone and chert	79	174
Crevice	1	175
Limestone and chert	30	205
Limestone	20	225
Limestone and chert, hard	13	238
Limestone boulders	4	242
Limestone, honeycomb	8	250
Well BB-2		
Owner: Avondale Mills Driller: H. W. Peerson Drilling Supply Co.		
Soil	2	2
Clay and mud, yellow	10	12
Limestone boulders, solid at 19 ft.	7	19
Limestone, very hard	25	44
Limestone with soft streaks, some water	10	54
Limestone, hard	13	67
Crevice, more water	1	68
Limestone, solid	141	209
Well BB-3		
Owner: E. R. Blair Driller: H. W. Peerson Drilling Supply Co.		
Soil	2	2
Shale, soft	8	10
Shale, black, solid	2	12
Shale, black, sandy (approximately 1½ gpm at 22 ft.)	20	32
Shale, black (reduced hole from 10-inch to 8-inch at 39 ft.)	28	60
Shale, black with soft streaks	28	88
Shale, black with streaks of flint	87	175
Shale and flint, black (crevice with water at 192 ft.)	25	200
Shale, black, soft at 215 ft., probably more water (6-hour test indicated 30 to 40 gpm)	25	225
Shale, black	58	283
Shale, black, fine-grained	3	286
Shale, black with hard and soft streaks	14	300

GEOLOGY AND GROUND-WATER RESOURCES OF ESCAMBIA COUNTY, ALABAMA

By Joseph W. Cagle, Jr., and J. G. Newton

GEOLOGICAL SURVEY OF ALABAMA

BULLETIN 74

GEOLOGICAL SURVEY OF ALABAMA

Philip E. LaMoreaux
State Geologist

DIVISION OF WATER RESOURCES

Doyle B. Knowles
Chief Hydraulic Engineer

BULLETIN 74

GEOLOGY AND GROUND-WATER RESOURCES OF ESCAMBIA COUNTY, ALABAMA

By Joseph W. Cagle, Jr., and J. G. Newton

Prepared by the United States Geological Survey
in cooperation with the
Escambia County Board of Revenue and the
Geological Survey of Alabama

UNIVERSITY, ALABAMA

1963

STATE OF ALABAMA

Honorable George C. Wallace, Governor

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University, Alabama
September 24, 1963

Honorable George C. Wallace
Governor of Alabama
Montgomery, Alabama

Dear Governor Wallace:

I have the honor to transmit the manuscript of a report entitled "Geology and Ground-Water Resources of Escambia County, Alabama" by Joseph W. Cagle, Jr., and J. G. Newton, with the request that it be printed as Bulletin 74 of the Geological Survey of Alabama.

Moderate to large quantities of ground water are obtained from sand and gravel beds in the Lisbon and Citronelle Formations and the Miocene Series, and limestone beds in the Byram Formation and the Ocala and Marianna Limestones. Other formations yield small to moderate quantities of water. Abundant quantities of ground water are generally available in most parts of Escambia County. Water from all aquifers in the county, except those in the Miocene Series, Citronelle Formation, and terrace and alluvial deposits, generally is moderately hard to hard but is otherwise of good chemical quality. Water from aquifers in the Miocene, Citronelle, and terrace and alluvial deposits generally is of good quality but locally may contain excessive iron.

Respectfully,

Philip E. LaMoreaux

Philip E. LaMoreaux
State Geologist

CONTENTS

Page

- Abstract 1
- Introduction 2
  - Purpose and scope 2
  - Previous investigations 3
  - Methods of investigation 4
  - Location and general features 5
  - Resources and development 5
  - Topography and drainage 7
  - Climate 8
  - Well-numbering system 9
  - Acknowledgments 13
- Geologic formations and their water-bearing properties 13
  - General stratigraphy 13
  - Structure 14
  - Eocene Series 17
    - Wilcox Group 17
      - Hatchetigbee Formation 17
    - Claiborne Group 18
      - Tallahatta Formation 18
      - Lisbon Formation 19
      - Gosport Sand 21
    - Jackson Group 22
      - Moodys Branch Formation 22
      - Yazoo Clay 24
      - Ocala Limestone 25
  - Oligocene Series 26
      - Red Bluff Clay 27
    - Vicksburg Group 27
      - Marianna Limestone 28
      - Byram Formation 29
        - Glendon Limestone Member 29
        - Bucatunna Clay Member 30
      - Chickasawhay Limestone 32
  - Miocene Series Undifferentiated 33
  - Pliocene Series 36
      - Citronelle Formation 37
  - Pleistocene and Recent Series 38
- Ground water 40
  - Source 40
  - Occurrence and storage 41
  - The water table 42
  - Artesian conditions 44
  - Methods of recovery of water 45
  - Water-level fluctuations and their significance 46
  - Municipal supplies 47

CONTENTS

Page

Atmore 47
Brewton and East Brewton 50
Flomaton 52
Pollard 53
Aquifer tests 53
Chemical quality 58
Hatchetigbee Formation 64
Lisbon Formation 64
Gosport Sand 64
Moodys Branch Formation 64
Yazoo Clay 65
Ocala Limestone 65
Marianna Limestone 66
Byram Formation 66
Chickasawhay Limestone 66
Miocene Series 67
Citronelle Formation 69
Terrace and alluvial deposits 69
Conclusions 69
Selected bibliography 71
Basic data 75

ILLUSTRATIONS

(All Plates are in pocket)

Plate 1. Map of Escambia County, Alabama showing location of wells and area of artesian flow.
2. Geologic map of Escambia County, Ala.

Page

Figure 1. Map of Alabama showing area studied and areas of other ground-water studies 6
2. Annual precipitation at Brewton (1891-1900; 1926-56) and Atmore (1940-56) 10
3A. Average monthly precipitation and temperature at Brewton 11
B. Average monthly precipitation and temperature at Atmore 11
4. Diagram showing well-numbering system in Escambia County, Ala 12
5. Lithologic and electric logs of geologic units penetrated in well O-150 at Brewton 15

CONTENTS

Page

Figure 6. Map showing approximate altitude of the top of the Glendon Limestone Member of the Byram Formation in Escambia County 16
7. Diagram showing divisions of subsurface water 41
8. Schematic diagram showing artesian and water-table conditions 43
9. Fluctuation of water levels in wells A-13, E-45, O-59, and Q-55 tapping the Eocene and Oligocene Series, and monthly precipitation at Brewton 48
10. Fluctuations of water levels in wells P-37, Q-15, X-41, and Z-41 tapping the Pliocene and Pleistocene Series, and monthly precipitation at Brewton 49
11A. Total monthly pumpage, in million gallons, from municipal well O-95 at Brewton for the period July 1956 through June 1957 51
B. Total monthly pumpage, in million gallons, from municipal well O-150 at Brewton for the period July 1956 through June 1957 51
12. Water-level fluctuations in wells tapping the Lisbon Formation at Brewton during aquifer test on well O-150 55
13. Theoretical drawdown in an ideal aquifer, having coefficients of transmissibility and storage the same as the average of those computed for observation wells O-141 and O-147 tapping the basal sand of the Lisbon Formation at Brewton 56
14. Water-level fluctuations in well W-4 during aquifer test 57
15. Water-level fluctuations in well H-68 during aquifer test 59
16. Water-level fluctuations in well Z-71 at Atmore during aquifer test 60
17. Theoretical drawdown in an ideal aquifer, having coefficients of transmissibility and storage the same as the average of those computed from drawdown and recovery data for observation well Z-71 61
18. Map showing distribution of hardness of water in wells tapping the Miocene Series, Escambia County 68

TABLES

Page

Table 1. Generalized section of the geologic units in Escambia County, Ala., and their water-bearing characteristics ....facing 14
2. Coefficients of transmissibility and storage computed from aquifer tests, Escambia County.... 54
3. Suggested water-quality tolerances for selected industrial uses 63
4. Records of wells in Escambia County, Ala.... 76
5. Chemical analyses of water from selected wells in Escambia County, Ala.... 149
6. Depths of geologic units based on electric logs of water and oil test wells, Escambia County, Ala.... 153
7. Drillers' logs of wells in Escambia County, Ala.... 158

GEOLOGY AND GROUND-WATER RESOURCES OF ESCAMBIA COUNTY, ALABAMA

By Joseph W. Cagle, Jr., and J. G. Newton

ABSTRACT

Escambia County, in south-central Alabama, has an area of 962 square miles and, in 1960, had a population of 33,511. The economy of the county is based largely on its agricultural and timber industries.

The county is in the Coastal Plain province and is divided into three physiographic subdivisions: the Southern Limestone Hills, the Southern Pine Hills, and the flood plain which lies along the Conecuh, Sepulga, Escambia, and Little Rivers.

Geologic formations cropping out in and underlying Escambia County pertinent to the ground-water investigation of the area range in age from early Eocene to Recent. The strike of the beds in Escambia County is northwestward and the dip south and southwestward at rates generally ranging from 5 feet per mile for beds of the Pliocene Series to 50 feet per mile for the lowermost beds of the Eocene Series. The geologic units are, in ascending order, the Hatchetigbee, Tallahatta, and Lisbon Formations, the Gosport Sand, the Moodys Branch Formation, the Yazoo Clay, and the Ocala Limestone of the Eocene Series; the Red Bluff Clay, the Marianna Limestone, the Byram Formation, and the Chickasawhay Limestone of the Oligocene Series; the Miocene Series undifferentiated; the Citronelle Formation of the Pliocene Series; terrace deposits of the Pleistocene Series; and alluvium of the Recent Series.

Moderate to large quantities of water can be obtained from the Lisbon Formation in most parts of the county. Individual wells tapping the formation at Brewton yield as much as 787 gpm (gallons per minute), and flow as much as 180 gpm. Large yields can probably be obtained from the formation in east-central parts of the county where the basal sand is as much as 60 feet thick.

Moderate to large quantities of water can generally be obtained from multiple aquifer wells tapping the Ocala and Marianna Limestones and the Glendon Limestone Member of the Byram Formation in eastern and central parts of the county. Flows of as much as 85 gpm are obtained from wells tapping the limestones in lowland areas.

Permeable beds of sand in the undifferentiated Miocene Series in south-central and southwestern parts of the county yield moderate to large quantities of water. Individual wells yield as much as 760 gpm and it is probable that 300 gpm or more can be obtained from the Miocene throughout the above area.

Beds of sand and gravel in the Citronelle Formation, the principal aquifer in western Escambia County, yield as much as 333 gpm to individual wells tapping them at Atmore. Similar yields can probably be obtained from the formation in western parts of the county where it is as much as 100 feet thick.

Small to moderate quantities of water are also obtained in eastern and central parts of the county from the Gosport Sand, Moodys Branch Formation, Yazoo Clay, Bucatunna Clay Member of the Byram Formation, Chickasawhay Limestone, and terrace and alluvial deposits.

Water from all aquifers in Escambia County, except those in the Miocene Series, Citronelle Formation, and the terrace and alluvial deposits, generally is moderately hard to hard but is otherwise of good quality. Water from aquifers in the Miocene, Citronelle, and terrace and alluvial deposits generally is of good quality being soft and containing only small amounts of objectionable minerals. Locally, the water may contain excessive iron. Moderately hard water is obtained from the Miocene in the Bradley, Brewton, Foshee, Pollard, and Wallace areas. Hard water from aquifers in the underlying Oligocene Series probably is replacing, in part, large quantities of water withdrawn from the Miocene in those areas.

INTRODUCTION

PURPOSE AND SCOPE

All municipal, industrial, and most agricultural and domestic water supplies in Escambia County are obtained from wells. Drought, industrial expansion, and the increased use of water for all purposes have created water problems that emphasize the need for adequate information on the ground-water resources of the area. New industries, municipalities, and individuals have requested facts on the development of ground-water supplies—the amount available, the quality of water, and the depth necessary to obtain an adequate supply.

The need for adequate ground-water facts in Escambia County prompted an investigation of its ground-water resources. The ground-water investigation, begun in October 1954, was made by the Ground Water Branch of the U.S. Geological Survey in cooperation with the Escambia County Board of Revenue and the Geological Survey of Alabama. The purpose of the investigation was to make a detailed study of the quality, quantity, and availability of ground water and to relate the occurrence and movement of ground water to the thickness, structure, and distribution of the geologic formations.

The investigation was made under the direct supervision of P. E. LaMoreaux and W. J. Powell, successive district geologists in charge of ground-water investigations in Alabama.

PREVIOUS INVESTIGATIONS

Many reports on the geology and ground-water resources of the Coastal Plain of Alabama refer to Escambia County. The geology of the region was first described in 1894 in a report entitled "Report on the Geology of the Coastal Plain of Alabama," by E. A. Smith, L. C. Johnson, and D. W. Langdon, Jr. Information on ground water in Escambia County was first published in 1907 in Geological Survey of Alabama Monograph 6, "The Underground Water Resources of Alabama," by E. A. Smith.

"The Cenozoic Formations," by C. W. Cooke, in Geological Survey of Alabama Special Report 14, "Geology of Alabama," published in 1926, contained specific references to the geology of Escambia County. Geologic sections and fossil lists for formations at several localities in the vicinity of the Conecuh and Sepulga Rivers in the northwestern part of the county were included in the report. Geologic formations cropping out in the county were mapped in considerable detail by F. S. MacNeil and are shown on a map entitled "Geologic Map of the Tertiary Formations of Alabama," published in 1946.

Later reports containing ground-water information in Escambia County include: "Fluoride in the Ground Water of the Tertiary Area of Alabama," by P. E. LaMoreaux, in 1948; and "Water Resources and Hydrology of Southeastern Alabama," by R. W. Carter, M. R. Williams, P. E. LaMoreaux, and W. W. Hastings, in 1949.

The discovery of oil in the vicinity of Pollard, Ala., in 1952, resulted in an intensive drilling program throughout the county. Subsurface geologic data made available to the U.S. Geological Survey was an important contribution to this ground-water study. The geology of the Pollard field area is described by C. V. Winter in "Transactions of the Gulf Coast Association of Geological Societies," published in 1954.

Basic data obtained during the present investigation prior to 1956 were published in 1957 in Geological Survey of Alabama Information Series 7 entitled "Interim Report on Ground Water in Escambia County, Alabama, with Special Reference to the Brewton Area," by Joseph W. Cagle, Jr., and Billy L. Floyd. A selected bibliography of reports containing pertinent or related information concerning the geology and ground-water resources of Escambia County is appended to this report.

METHODS OF INVESTIGATION

Much of the first 2 years of the investigation consisted of making an inventory of wells in the county. Data recorded from the 1,540 wells inventoried, including their construction, depth, source of supply, water level, yield, and use, are given in table 4. Detailed records were made only on selected wells in areas where numerous wells were closely spaced and of similar construction. The locations of wells inventoried, shown on plate 1, were plotted from automobile odometer readings and are presumed to be correct within 0.1 mile. The land surface altitudes, determined by aneroid barometer, are accurate to within ± 5 feet.

Water samples were collected from 969 wells and analyzed to determine the hardness and the chloride content. The results of more complete chemical analyses for water samples collected from 54 wells are given in table 5.

Aquifer tests were made to determine hydrologic characteristics of the principal aquifers tapped by wells in the county.

Sample cuttings collected from wells drilled in the area of study were studied to determine the lithology, thickness, and extent of formations in the subsurface. Drillers' logs showing the general lithology and thicknesses of beds penetrated in 138 wells in Escambia County are given in table 7. Electric logs for 29 water wells and 53 oil test wells were analyzed and correlated with other geologic data to define the stratigraphy and extent of formations in the subsurface. Oil test wells for which information was available to aid in determining the stratigraphy of formations in the subsurface of Escambia County are included in table 6. The depths at which the various formations were penetrated in oil test wells and water wells are also given in table 6.

The fieldwork included a study of exposures of rocks in road cuts and along streams, and of soils, vegetation, and topography to determine and define the areas of outcrop of the geologic formations. The geologic map (pl. 2), based on these observations, represents a modification of a geologic map of the area prepared by F. S. MacNeil in 1946.

The base map of the county was prepared from the following sources: Agricultural Adjustment Administration (AAA) aerial photographs; a State Highway Department map of Escambia County (1952);

and a U.S. Geological Survey topographic map (1942) covering that part of the county from long 87°30' W. to the Escambia-Baldwin County line and from lat 31°00' N. to lat 31°15' N.

LOCATION AND GENERAL FEATURES

Escambia County is in south-central Alabama and is bounded on the west by Baldwin County, on the north by Monroe and Conecuh Counties, on the east by Covington County, and on the south by the State of Florida (fig. 1). The county has an area of 962 square miles and Brewton, the county seat, is about 60 miles north of the Gulf of Mexico and Pensacola, Fla., and 85 miles northeast of Mobile, Ala.

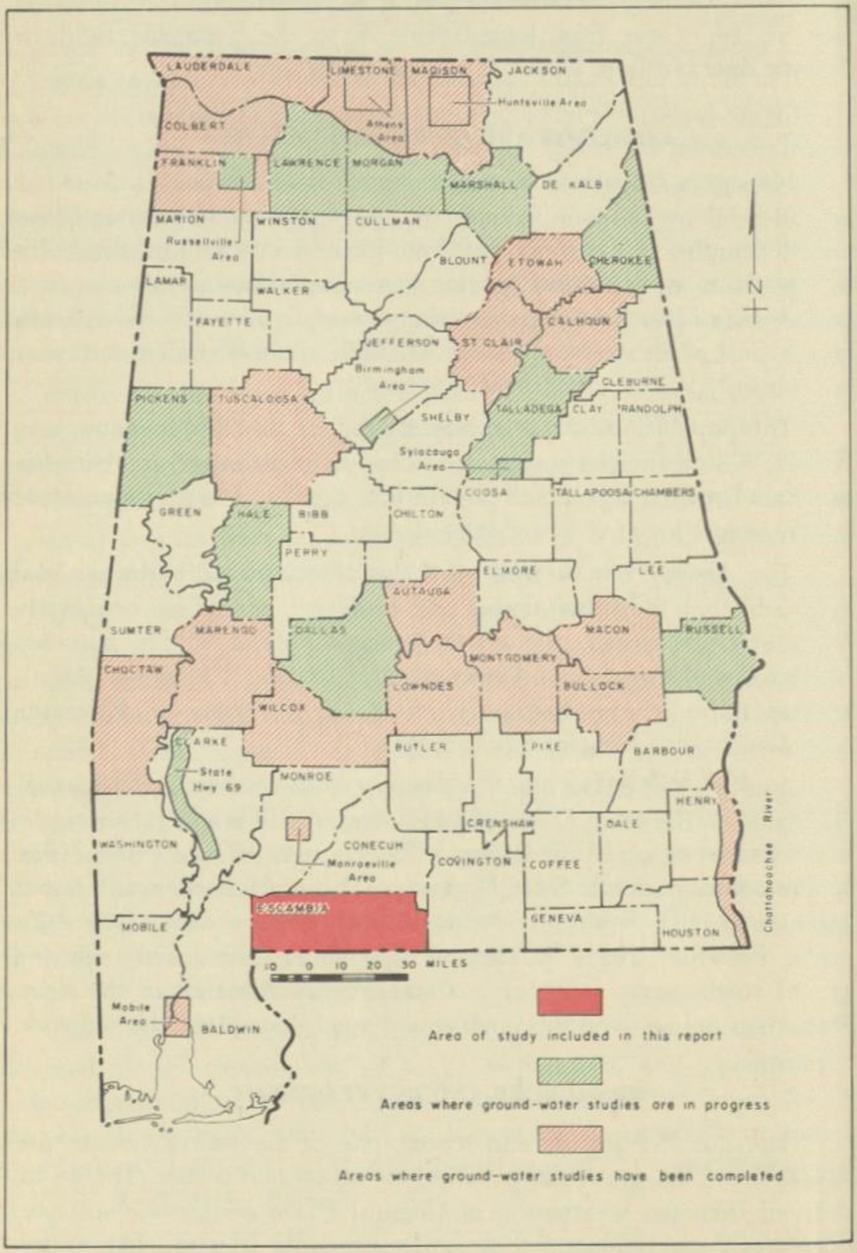
The population of the county, based on the 1960 census, was 33,511. The principal towns according to population are Brewton and East Brewton (combined population, 8,820), Atmore (population 8,117), and Flomaton (population 1,454).

The county has a well developed system of highways and railroads that facilitate travel and transportation. The Louisville & Nashville Railroad, connecting Montgomery and Mobile, provides service for the towns of Brewton, Atmore, and Flomaton. An alternate route of the Louisville & Nashville connects Flomaton with Pensacola, Fla., and Selma, Ala.

A network of paved highways traverse the county. U.S. Highway 31 connects Brewton, Atmore, and Flomaton with major cities to the north and west, and U.S. Highway 29 connects Brewton with cities to the east and south. State Highways 21 and 41, north-south trending highways in western and central parts of the county, serve Atmore, Brewton, and Flomaton. A system of paved and improved gravel roads serve most of the smaller communities in the area. Numerous unimproved dirt and gravel roads complete the network.

RESOURCES AND DEVELOPMENT

The soils, climate, and topography of Escambia County are favorable to the growth of a variety of crops and timber. The soils, derived from the weathering of Coastal Plain sediments, are predominantly sandy loam and generally are well drained. The principal crops grown in the upland areas include cotton, corn, potatoes, grain, soy beans, peanuts, and fruits. The western part of the


LAUDERDALE
LIMESTONE
MADISON
JACKSON
Athens Area
Huntsville Area
COLBERT
FRANKLIN
LAWRENCE
MORGAN
MARSHALL
DE KALB
MARION
WINSTON
CULLMAN
Russellville Area
BLOUNT
ETOWAH
CHEROKEE
LAMAR
WALKER
FAYETTE
JEFFERSON
ST CLAIR
CALHOUN
Birmingham Area
CLEBURNE
PICKENS
TUSCALOOSA
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CLARKE
BUTLER
PIKE
BARBOUR
State Hwy 69
MONROE
HENRY
CRENSHAW
DALE
WASHINGTON
CONECUH
Monroeville Area
COVINGTON
COFFEE
ESCAMBIA
GENEVA
MOBILE
HOUSTON
Chattahoochee River
N
10 0 10 20 30 MILES
Mobile Area
BALDWIN
Area of study included in this report
Areas where ground-water studies are in progress
Areas where ground-water studies have been completed

Figure 1.—Map of Alabama showing area studied and areas of other ground-water studies.

county is especially suited to pasture for cattle. The lowland areas along streams are utilized for growing timber and as pasture. Farms in Escambia County in 1954 consisted of 193,584 acres, 31.4 percent of the total acreage.

The economy of the county is based largely on timber resources. The T. R. Miller Mill Co. at Brewton, founded in 1848, is the oldest active lumber manufacturer in Alabama. The Container Corp. of America began operation in 1957 and has contributed substantially to the economy of the Brewton area.

The sandy soils support stands of slash and longleaf yellow pine and a variety of other trees. The total forest area in the county is 481,300 acres of which 452,069 are privately or State owned. The U.S. Government maintains two national forest reserves and one experimental forest in the county.

Oil was discovered at Pollard, in south-central Escambia County, in 1952. The field, developed in an area of faulting, has a productive area that is about 3¼ miles long and ¾ mile wide.

Other mineral resources of the county include deposits of sand, gravel, and limestone.

TOPOGRAPHY AND DRAINAGE

Escambia County lies within the Coastal Plain province and includes parts of three physiographic subdivisions: the flood plain, the Southern Limestone Hills, and the Southern Pine Hills. The flood plain lies along the Conecuh, Sepulga, Escambia, and Little Rivers and larger tributaries, and is underlain by alluvial deposits of sand, silt, gravel, and clay. The alluvium overlies older rocks cropping out along the streams. The Southern Limestone Hills (Semmes, 1929, p. 203-206) occupy most of the three northeasternmost townships. This physiographic subdivision is developed on the calcareous sediments in the Eocene and Oligocene Series. The Southern Pine Hills (Fenneman, 1938, p. 68-77) is developed on the undifferentiated deposits of Miocene age and the Citronelle Formation of Pliocene age. The outcrop areas of the geologic formations that comprise the physiographic divisions are shown on the geologic map (pl. 2).

A prominent physiographic feature in the Southern Pine Hills is the upland plain developed on the Citronelle Formation. The plain is most extensive and least dissected by streams west of Escambia River. It is characterized in this area by broad flat tablelike surfaces, in places 5 to 10 miles in width. The areal extent of the upland plain, sometimes referred to as the "Atmore Plain," is smaller in interstream areas between Burnt Corn Creek and the Escambia River, and in the Dixonville and Rock Creek areas south of the Conecuh River where stream dissection is more advanced.

A prominent physical feature of the uplands is the numerous small round or elongate depressions which occur in the interstream areas. These depressions vary from a few to about 100 feet in diameter and are about 5 feet deep. They support a scrubby growth of gum trees and other vegetation and occasionally contain water. The origin of the depressions has not been ascertained; however, it cannot be attributed to the solution of underlying limestone since limestone formations occur too deep to have influenced the topography. A more detailed study of the subsurface in and adjacent to the depressions would be necessary to determine their origin.

The upland plain west of Escambia River has an altitude of about 300 feet except in the Huxford area where a maximum altitude of about 345 feet is attained. Locally, the relief of the plain varies from about 5 to 15 feet. The surface of the upland plain developed on the Citronelle Formation slopes south about 5 feet per mile.

The principal streams in Escambia County are Conecuh, Sepulga, Escambia, and Little Rivers, and the principal tributaries are Murder, Burnt Corn and Little Escambia Creeks. Little River marks the Escambia-Monroe County line in the northwest and is a tributary of the Alabama River. The Conecuh River flows in a southwesterly direction across the slightly tilted strata, while its tributaries flow in a southerly direction forming a dendritic (treelike) drainage pattern. Intermittent streams drain most of the area west of the Escambia River. A few of the larger streams, for example Perdido Creek, have narrow steep-sided valleys typical of streams in early stages of development.

CLIMATE

Escambia County has a temperate to subtropical climate which is modified by the prevailing southerly winds from the Gulf of

Mexico that give the area a mild humid climate. Extremes in temperature are rare and of short duration and precipitation is distributed fairly evenly throughout the year. The growing season averages about 253 days and generally two, and occasionally three, crops are grown in 1 year.

The U.S. Weather Bureau maintains precipitation and temperature stations near Brewton and at the Atmore State Prison Farm, and a precipitation station at Wallace. Records are available for the Brewton station for 38 years of an interrupted 66-year period from 1890-1956; for the Atmore State Prison Farm station for the period of 1940-56; and the Wallace station for the period 1941-56. Graphs showing data recorded at the Brewton and Atmore stations are shown on figures 2 and 3.

The summer months are moderately hot and temperatures occasionally rise to about 100 °F. July, the hottest month, has an average temperature of 81.1 °F and January, the coldest, has an average temperature of 49.5 °F. The mean annual temperature for the 38-year period of record at the Brewton station was 65.9 °F. The average date of the last killing frost is March 9 and the average date of the first killing frost is November 17.

Precipitation in Escambia County consists almost entirely of rainfall. The average annual precipitation for the 38-year period of record at the Brewton station was 57.67 inches. The average annual precipitation at the Brewton station during the period 1951-56, a time of general drought, was 52.05 inches. The wettest year of record was 1948 when 88.54 inches was recorded at Atmore, and the driest, 1954, when 31.4 inches was recorded at Brewton.

WELL-NUMBERING SYSTEM

The well-numbering system used in Escambia County is based on the Federal land classification. Each township is divided into 36 sections numbered consecutively starting with 1 in the northeast corner of the township and ending with 36 in the southeast corner. Each township in Escambia County has been assigned a letter in the same order that sections are numbered. Therefore, letter A is assigned to the northeast township and the adjoining townships are lettered alphabetically through Z to AA (fig. 4). Townships, throughout the text of this report, are identified by

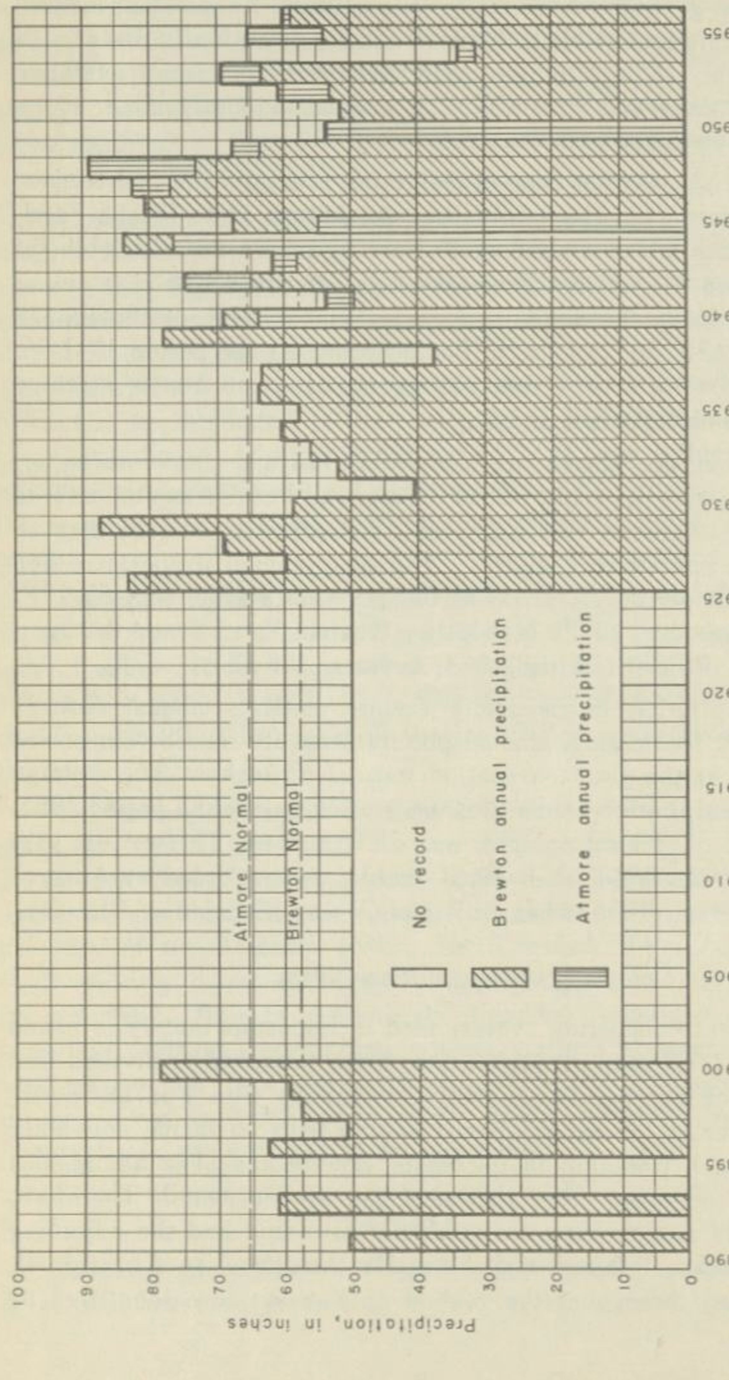


Figure 2.—Annual precipitation at Brewton (1891-1900; 1926-56) and Atmore (1940-56).

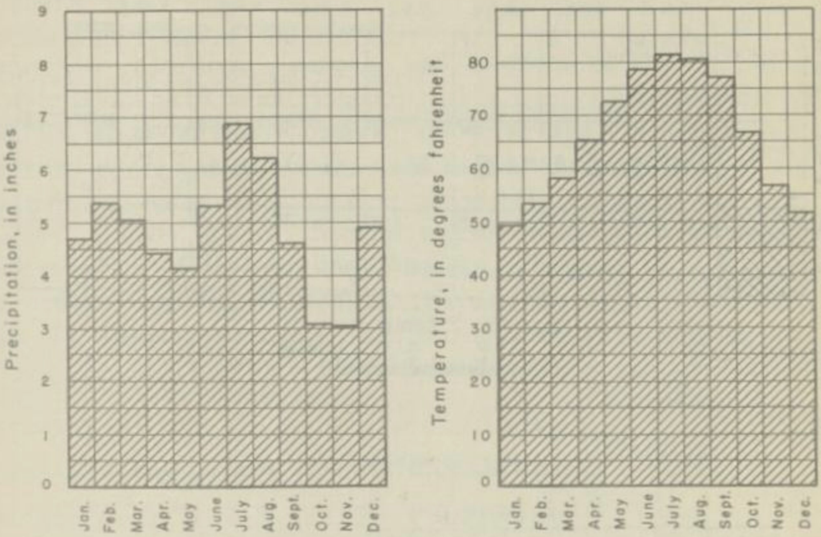


Figure 3A.—Average monthly precipitation and temperature at Brewton.

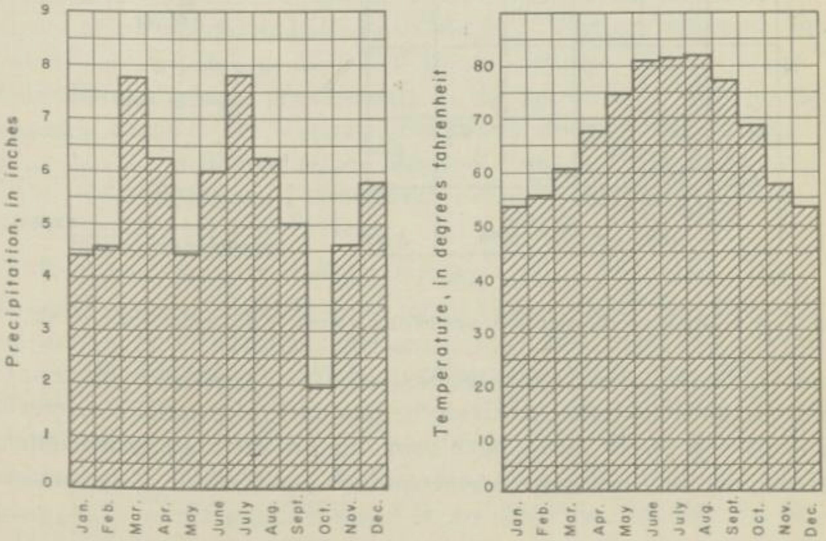


Figure 3B.—Average monthly precipitation and temperature at Atmore.

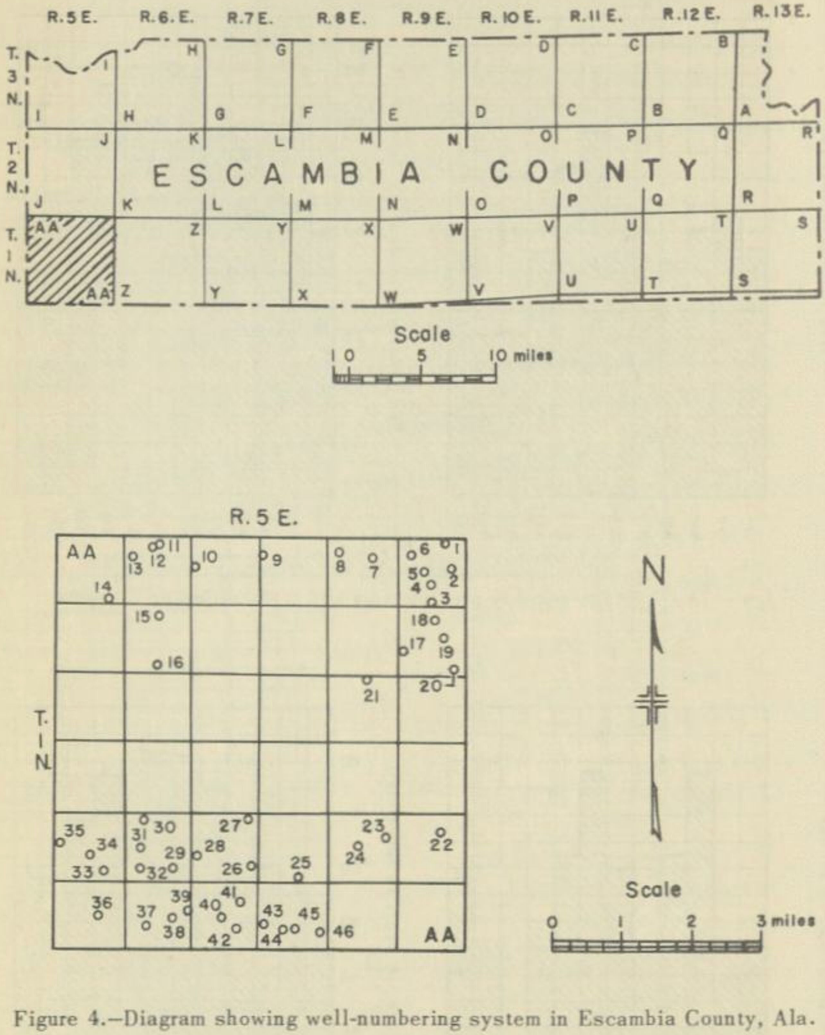

R.5 E.
R.6.E.
R.7E.
R.8 E.
R.9 E.
R.10 E.
R.11 E.
R.12 E.
R.13E.
T. 3 N.
T. 2 N.
T. 1 N.
ESCAMBIA COUNTY
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z AA
Scale
0 5 10 miles
R. 5 E.
T. 1 N.
AA
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46
N
Scale
0 1 2 3 miles

Figure 4.–Diagram showing well-numbering system in Escambia County, Ala.

their alphabetical designation. Similarly, wells within each township are numbered consecutively beginning in the northeast corner in section 1. Wells within each township are prefixed by the letter identifying the township, for example, A-1, A-2, A-3.

ACKNOWLEDGMENTS

Acknowledgment for cooperation and assistance is made to Judge Reo Kirkland, chairman, and members of the Escambia County Board of Revenue; to municipal officials of Atmore, Brewton, East Brewton and Flomaton; and to Mr. Ed Leigh McMillan, Brewton. Appreciation is expressed to the many residents of the county who contributed information about their wells and otherwise aided the investigation. Special acknowledgment is given Mr. Marcus Blair, Evergreen; the Etheridge Plumbing Co., Atmore; Mr. Travis Lambeth, Brewton; and Layne-Central Co., Pensacola, Fla., for furnishing drillers' logs and data on wells and for permitting the sampling and observation of wells during drilling operations.

GEOLOGIC FORMATIONS AND THEIR WATER-BEARING PROPERTIES

GENERAL STRATIGRAPHY

Formations of Tertiary and Quaternary ages are sources of potable ground water in Escambia County. These formations are divided into six series which are, in ascending order: the Eocene, Oligocene, Miocene, and Pliocene Series of Tertiary age; and the Pleistocene and Recent Series of Quaternary age. All but a part of the Eocene Series, present only in the subsurface, crop out in Escambia County. The Tertiary formations are underlain by rocks of Cretaceous and pre-Cretaceous age which are not considered in this report because of their depth and the occurrence of excessively mineralized water in them.

Rocks of Tertiary and Quaternary age in Escambia County dip south and southwest at rates ranging from 5 to 50 feet per mile and consist chiefly of limestone, sand, clay, silt, marl, and gravel. The geologic units of Tertiary and Quaternary age considered in this report have an aggregate thickness that ranges from 700 feet in the northeastern part of the county to 1,500 feet in the southwestern part. Formations described in this report include only those that contain potable water or are potential sources for development of ground water.

The Eocene Series includes the Wilcox Group of which only the Hatchetigbee Formation is described here; the Claiborne Group which comprises the Tallahatta and Lisbon Formations and the Gosport Sand; and the Jackson Group which comprises the Moodys Branch Formation, the Yazoo Clay, and the Ocala Limestone. The Oligocene Series comprises the Red Bluff Clay, the Vicksburg Group consisting of the Marianna Limestone and the Byram Formation, and the Chickasawhay Limestone. The Miocene Series includes the undifferentiated Paynes Hammock Sand and the Catahoula Sandstone. The Pliocene Series includes only the Citronelle Formation. Terrace deposits are included in the Pleistocene Series and river alluvium in the Recent Series. A generalized section of these geologic units with brief descriptions of their lithologies and water-bearing characteristics is given in table 1. Lithologic and electrical characteristics of geologic units penetrated in well O-150 at Brewton are shown in figure 5.

STRUCTURE

Escambia County is located along the southeastern limb of the Mississippi Embayment geosyncline. Sediments deposited in this geosynclinal trough extend northwest to Illinois and west to Texas.

The strike of beds in Escambia County is northwestward and the dip south and southwestward at rates generally ranging from 5 feet per mile for beds of the Pliocene Series to 50 feet per mile for the lowermost beds of the Eocene Series. A structure contour map, based on the top of the Glendon Limestone Member of the Byram Formation, is shown in figure 6. The average dip of the top of the Glendon is about 25 feet per mile. The underlying Marianna and Ocala Limestones have approximately the same dip.

The normal dip of the formations in Escambia County is disrupted by four faults northwest of Pollard. The normal or gravity type faults trend northwestward and two of them, the Foshee and Pollard faults, form a graben (dropped block) along which considerable movement has taken place (pl. 2). Vertical movement of beds along the fault planes ranges from 300 feet in beds of Late Cretaceous Age to 50 feet in beds of Eocene age (Winter, 1954, p. 126). In the Pollard area, oil has accumulated along the fault zones where permeable sands have been brought into contact with more impermeable beds. The location of the faults shown on plate 2 represents the surface projection of their position in the subsurface.

Table 1.—*Generalized section of the geologic units in Escambia County, Ala., and their water-bearing characteristics*

Series	Stratigraphic unit		Approximate thickness (feet)	Lithology	Water-bearing characteristics
Recent	Alluvium		0-55	Poorly sorted sand, clay, silt, and gravel.	Supplies small quantities of water to domestic and stock wells.
Pleistocene	Terrace deposits		0-55	.... do	Do.
Pliocene	Citronelle Formation		0-140	Sand, fine- to coarse-grained with pebbles and granules of quartz gravel; contains lenticular beds of white to gray clay.	Principal aquifer in the western part of the county where it furnishes small to large quantities of water for domestic, stock, industrial, and public supplies. Furnishes adequate domestic and stock supplies in parts of the eastern half of Escambia County.
Miocene	Undifferentiated Catahoula Sandstone and Paynes Hammock Sand		0-650	Clay, light-gray to varicolored; sandy clay; thin to massive beds of gray to varicolored fine- to coarse-grained sand; sandstones, sands, and clays are often micaceous and lignitic and locally are sparsely fossiliferous.	Supplies small to moderate quantities of water to domestic wells in eastern Escambia County. Sands yield moderate to large quantities of water to wells in central and western parts of the county. Municipal wells at Flomaton and Atmore develop large supplies from the sands.
Oligocene	Chickasawhay Limestone		0-70	Limestone, brown and gray, sandy, dolomitic, fossiliferous. Interbedded with dark-blue and greenish-gray sandy silty clay and fine-grained sand.	Solution cavities in limestone supply water for domestic use in the Brewton area. Sand beds yield small quantities of water to flowing wells at Brewton and Wallace.
	Byram Formation	Bucatunna Clay Member	0-100	Clay and marl, light- to dark-gray and brown, sandy, commonly lignitic or carbonaceous; contains some thin beds of gravel and limestone. In southwestern Brewton, the upper part consists of fine-grained glauconitic sand and sandy clay.	Relatively impervious and not a source of water supply in most areas. Sand beds in the upper part yield small quantities of water to flowing wells in the Brewton area.
		Glendon Limestone Member	35-60	Limestone, white, glauconitic, hard, crystalline, abundantly fossiliferous.	Solution cavities yield small to moderate quantities of water to wells. Usually not developed separately as a single aquifer but is tapped in conjunction with the Marianna and Ocala Limestones. As combined aquifers they yield moderate quantities of water to wells in eastern and central Escambia County.
	Marianna Limestone			Limestone, marl, and calcareous sand, white to cream, soft, glauconitic, fossiliferous; alternating hard and soft beds in upper part.	Solution cavities in Limestone and calcareous sands supply small to moderate quantities of water to domestic and stock and some irrigation wells in the county. Usually tapped in conjunction with the Glendon Limestone Member of Byram Formation and the Ocala Limestone.
	Red Bluff Clay		5-12	Clay, sandy, calcareous; soft clayey and sandy glauconitic limestone.	Relatively thin and impermeable, not a source of ground water.
Eocene	Ocala Limestone		35-60	Limestone and calcareous sand, light-gray to cream, glauconitic, fossiliferous; contains beds of gray marl.	The Ocala is tapped in conjunction with the Marianna Limestone and the Glendon Limestone Member of Byram Formation in numerous wells. The combined aquifers furnish moderate supplies for domestic, stock, and irrigation use in central and eastern parts of Escambia County.
	Yazoo Clay		55-75	Clay, blue to grayish-green, fissile, silty; breaks with subconchoidal fracture; locally calcareous and fossiliferous; contains beds of white glauconitic sand in the upper part and limestone and sandy marl in basal part in some areas.	The Yazoo is relatively impermeable although sand beds in the upper part and limestone and sandy marl in the basal part yield small quantities of water to wells in the eastern and central parts of the county. Permeable beds in the Yazoo are generally tapped in conjunction with aquifers in other formations.
	Moodys Branch Formation		35-55	Limestone and marl, light-gray to greenish-gray, sandy, glauconitic, abundantly microfossiliferous; contains beds of glauconitic sand.	Beds of glauconitic sand furnish small supplies to domestic and farm wells in central and eastern Escambia County. Permeable beds in the Moodys Branch are generally tapped in conjunction with aquifers in other formations.
	Gosport Sand		10-35	Sand, greenish-gray, iron-stained, fine- to coarse-grained, abundantly glauconitic.	Yields small to moderate quantities of water to wells in the eastern and central parts of the county. Not generally tapped as only source of supply to wells. Numerous wells tap the Gosport in conjunction with other aquifers.
	Lisbon Formation		100-180	Sand, white to gray, fine- to coarse-grained, with some thin beds of fossiliferous limestone. The upper 15 to 35 feet contains beds of glauconitic fossiliferous limestone and marl. The basal sand is medium- to coarse-grained and is as much as 60 feet thick.	Massive sands yield large quantities of water to public supply, industrial, and irrigation wells in east-central Escambia County. Most extensively developed in Brewton and East Brewton. Not penetrated by wells west of Pollard.
	Tallahatta Formation		110-240	Claystone or shale, gray, in upper 20 to 80 feet underlain by white to gray glauconitic fossiliferous limestone.	Relatively impermeable, not a source of water in Escambia County.
	Hatchetigbee Formation		150	Clay, dark-gray to brown, in upper part; lower 100± feet consists of white to green fine- to coarse-grained glauconitic sand.	Not tapped by wells in Escambia County. Sample and electric logs of water and oil test wells indicate that sands in the formation are permeable and may be a potential source of moderate to large quantities of water.

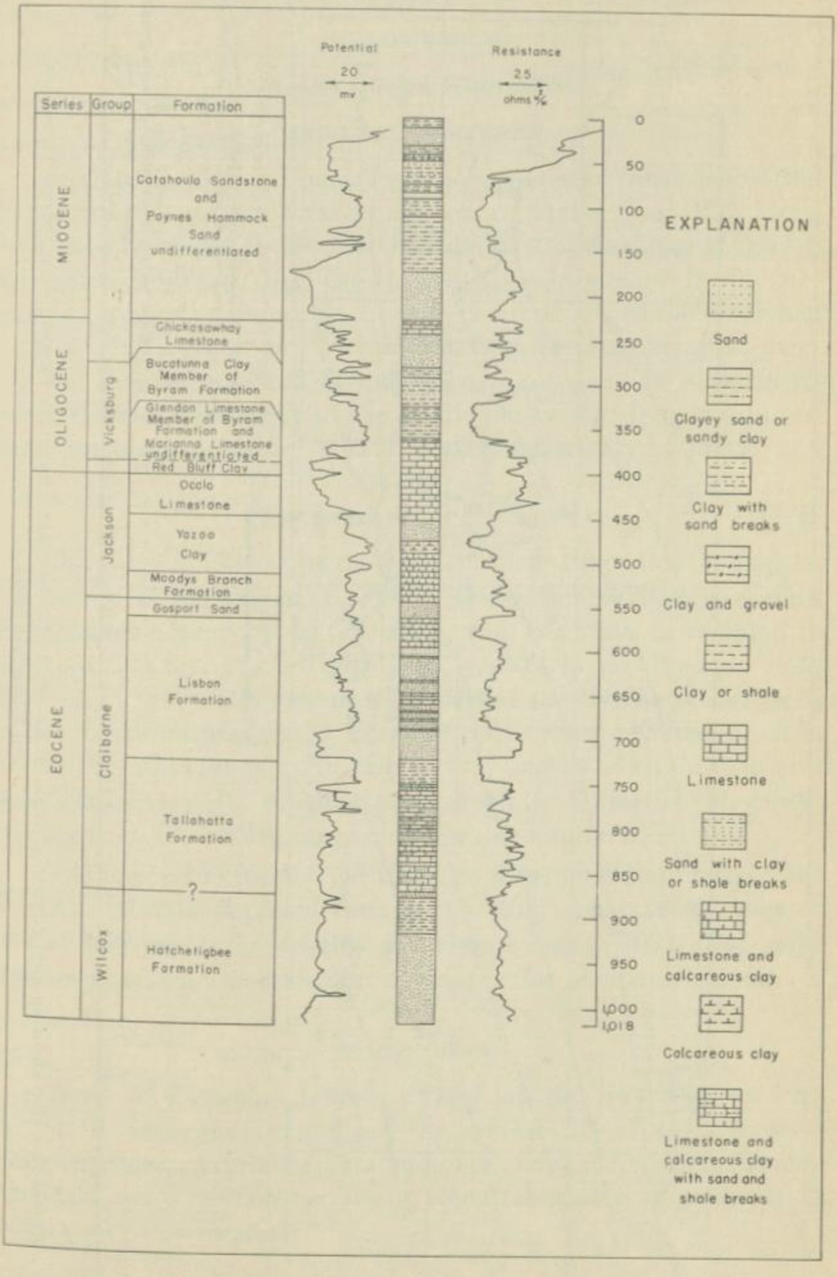

Series
Group
Formation
MIOCENE
Catahoula Sandstone and Paynes Hammock Sand undifferentiated
?
OLIGOCENE
Chickasawhay Limestone
Vicksburg
Bucatunna Clay Member of Byram Formation
Glendon Limestone Member of Byram Formation and Marianna Limestone undifferentiated
Red Bluff Clay
EOCENE
Jackson
Ocala Limestone
Yazoo Clay
Moodys Branch Formation
Claiborne
Gosport Sand
Lisbon Formation
Tallahatta Formation
?
Wilcox
Hatchetigbee Formation
Potential
20
mv
Resistance
25
ohms m²/m
0
50
100
150
200
250
300
350
400
450
500
550
600
650
700
750
800
850
900
950
1,000
1,018
EXPLANATION
Sand
Clayey sand or sandy clay
Clay with sand breaks
Clay and gravel
Clay or shale
Limestone
Sand with clay or shale breaks
Limestone and calcareous clay
Calcareous clay
Limestone and calcareous clay with sand and shale breaks

Figure 5.–Lithologic and electric logs of geologic units penetrated in well O-150 at Brewton.

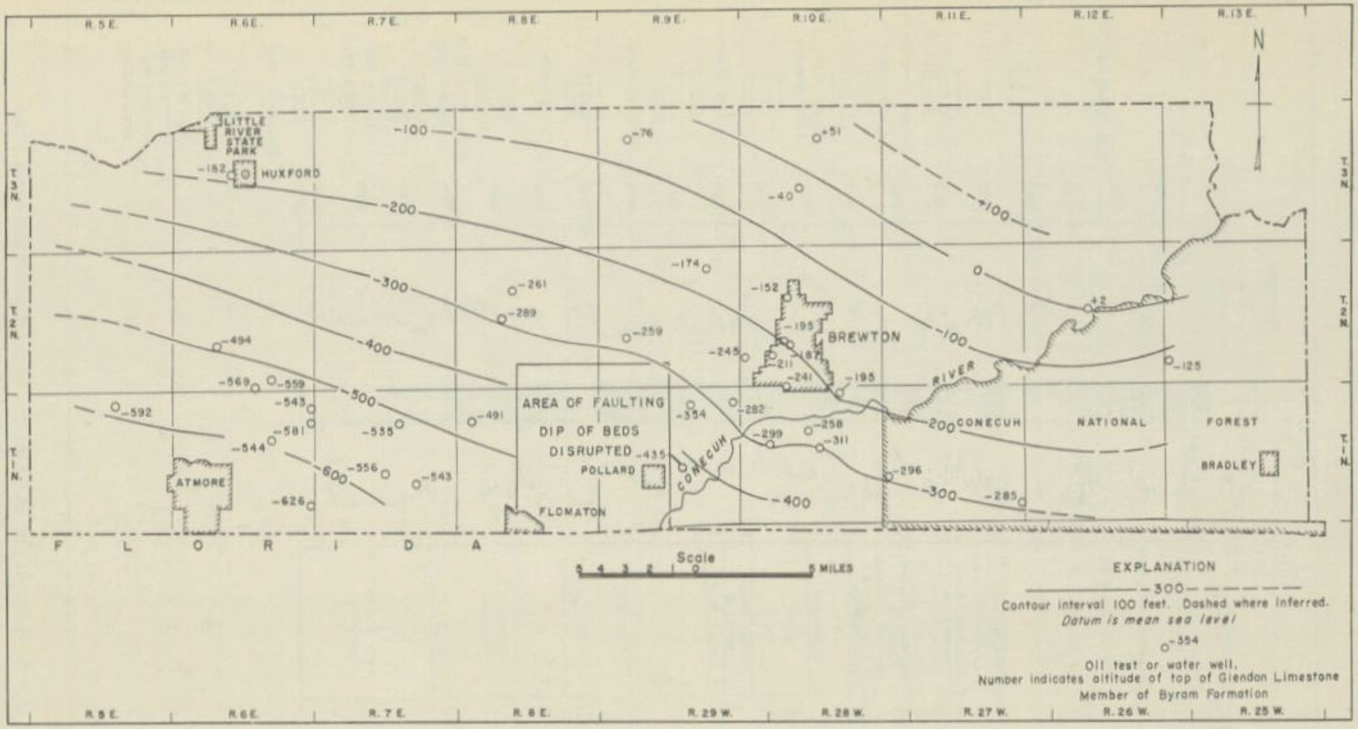

R.5 E.
R.6 E.
R.7 E.
R.8 E.
R.9 E.
R.10 E.
R.11 E.
R.12 E.
R.13 E.
T. 3 N.
T. 2 N.
T. 1 N.
N
LITTLE RIVER STATE PARK
HUXFORD
BREWTON
ATMORE
POLLARD
FLOMATON
BRADLEY
CONECUH RIVER
CONECUH NATIONAL FOREST
AREA OF FAULTING
DIP OF BEDS DISRUPTED
F L O R I D A
+100
0
-100
-200
-300
-400
-500
-600
Scale
5 4 3 2 1 0 5 MILES
EXPLANATION
-300-
Contour interval 100 feet. Dashed where inferred.
Datum is mean sea level
-354
Oil test or water well.
Number indicates altitude of top of Glendon Limestone Member of Byram Formation
R.5 E.
R.6 E.
R.7 E.
R.8 E.
R.29 W.
R.28 W.
R.27 W.
R.26 W.
R.25 W.

Figure 6.– Map showing approximate altitude of the top of the Glendon Limestone Member of the Byram Formation in Escambia County.

EOCENE SERIES

WILCOX GROUP

HATCHETIGBEE FORMATION

GENERAL FEATURES

The Hatchetigbee Formation, the uppermost formation of the Wilcox Group, was named for exposures at Hatchetigbee Bluff along the Tombigbee River in the northeastern part of Washington County, Ala. (Smith, 1886, p. 10). The Hatchetigbee is present in the subsurface throughout Escambia County. It crops out to the north and northeast in Conecuh and Monroe Counties. The Hatchetigbee overlies the Tuscahoma Sand of the Wilcox Group and is overlain by the Tallahatta Formation of the Claiborne Group. It is the lowermost formation containing potable water in Escambia County.

THICKNESS AND LITHOLOGY

The total thickness of the Hatchetigbee Formation in Escambia County is not known. However, in the Monroeville area north of Escambia County about 20 miles, the formation is reported to be about 200 feet thick (Ivey, 1957, p. 48). In the Brewton area, three water test wells penetrated a part of the Hatchetigbee. Beds in the formation penetrated in these wells were 140 feet thick in well O-150, 150 feet thick in well O-141, and 144 feet thick in well W-4. The test wells reached the top of the formation at depths ranging from 780 to 910 feet below the land surface.

The upper 140 feet of the Hatchetigbee, based on sample and electric log data obtained from well O-150, consists of about 40 feet of dark-gray to brown clay underlain by about 100 feet of green fine- to coarse-grained angular to subangular glauconitic sand.

WATER SUPPLY

Wells in Escambia County do not tap the Hatchetigbee Formation because of its depth and the availability of water in overlying aquifers. Available data indicate, however, that permeable sands in the formation may be a potential source of moderate to large quantities of water.

CLAIBORNE GROUP

The Claiborne Group is named for exposures in a bluff on the Alabama River at Claiborne, Monroe County. All strata between the "Lignitic" (Wilcox Group) below and the "White Limestone" (Jackson and Vicksburg Groups) above were assigned to the Claiborne by Smith and Johnson (1887, p. 25). They subdivided the Claiborne into the "Buhrstone" (Tallahatta) at the bottom and the Claiborne proper (Lisbon and Gosport) at the top.

The Claiborne Group, in this report, consists of the Tallahatta Formation at the bottom, the Lisbon Formation in the middle, and the Gosport Sand at the top. These formations crop out to the north and northwest in Conecuh and Monroe Counties where they dip southward and underlie all of Escambia County. All strata comprising the group are marine in origin.

TALLAHATTA FORMATION

GENERAL FEATURES

The term "Tallahatta" was first used by Dall (1898, p. 344). This term was suggested to him by E. A. Smith as a replacement for the lithologic term "buhrstone." The formation was named for the Tallahatta Hills, developed on the "buhrstone," which trend northwestward across the north-central part of Choctaw County, Ala. The Tallahatta underlies all of Escambia County. The top of the formation was penetrated at a depth of 720 feet below the land surface in a test well (O-150) at Brewton. The Tallahatta rests unconformably on the Hatchetigbee Formation of the Wilcox Group and is overlain by the Lisbon Formation.

THICKNESS AND LITHOLOGY

The Tallahatta Formation thickens down the dip in the subsurface of Escambia County. Formation thicknesses penetrated in wells range from 110 feet in the northern half of the county to 240 feet in the southern half. In the Brewton area, the Tallahatta is about 150 feet thick.

The uppermost part of the Tallahatta consists of gray shale or claystone that ranges in thickness from 20 to 80 feet. The clay contrasts with the coarse-grained basal sand of the overlying Lisbon Formation. Beneath the shale, in well O-150, the Tallahatta consists predominantly of white to gray glauconitic fossiliferous limestone with a bed of fine-grained sand in the upper part.

WATER SUPPLY

The Tallahatta is relatively impermeable and is not important as a source of ground water in Escambia County.

LISBON FORMATION

GENERAL FEATURES

The Lisbon Formation is named for exposures at Lisbon Landing, Clarke County, Ala. It overlies the Tallahatta Formation and is overlain by the Gosport Sand. The Lisbon crops out to the north in Monroe, Conecuh, and Covington Counties. It dips south and southwestward and underlies all of Escambia County. The top of the formation is at a depth of 220 feet below the land surface in well A-4, near the northeast corner of the county; at 565 feet below the land surface in a test well (O-150) at Brewton in the central part of the county; and at 1,015 feet below the land surface in an oil test well (SE¼ sec. 1, T. 1 N., R. 6 E.) at Robinsonville in the southwest part of the county.

THICKNESS AND LITHOLOGY

The average thickness of the Lisbon in Escambia County, based on records of 55 wells penetrating the formation (table 6), is 143 feet. The thickness penetrated in water and oil test wells in the county ranged from 100 feet near Jack Springs in the western part to 180 feet in sec. 30, T. 1 N., R. 11 E., in the eastern part.

The Lisbon Formation in the subsurface of Escambia County generally consists predominantly of white to gray fine- to coarse-grained sand with some thin beds of indurated limestone. Distinctive beds of greenish-gray glauconitic fossiliferous limestone and marl comprise the upper part of the formation. The thickness of these beds ranges from 15 to 35 feet but is generally about 20 feet in most areas. The calcareous beds at the top of the formation are overlain by glauconitic sand of the Gosport Sand. The top of the Lisbon, based on a study of well cuttings, is indicated by the first appearance of limestone and marl beneath the glauconitic sand.

A prominent white medium to very coarse grained sand of variable thickness comprises the basal part of the formation in all but a small area in the western part of the county. The maximum thickness of the sand in and near Brewton is about 40 feet. North and south of Brewton it has a maximum thickness of about 60 feet in the Pilgrams Church, Kirkland, Dixonville, and Travis School areas and in the westernmost part of the Conecuh National Forest. The thickness in the remainder of the county is 30 feet or less except in the Jack Springs, Poarch, Freemanville, and Nokomis areas in the western part where it is apparently absent.

WATER SUPPLY

Massive beds of fine- to coarse-grained sand of relatively high permeability in the Lisbon Formation attain a thickness of as much as 60 feet in the eastern half of Escambia County. They yield small to large quantities of water to domestic, stock, industrial, public supply, and irrigation wells in a part of this area. Water wells west of Pollard do not tap the Lisbon because of its considerable depth.

The most extensive development of the Lisbon for water is in the Brewton and East Brewton areas. Outside these areas, wells tap the Lisbon for supplies only in the vicinities of Damascus and Pollard. Most wells tapping the Lisbon in Escambia County also tap aquifers in overlying formations. Only in Brewton and East Brewton, principally in public supply wells, are sands in the Lisbon developed separately as sources of water supply.

Public supply wells O-95, O-140, O-141, O-150, and industrial well O-147 in Brewton, and public supply well O-174 in East Brewton obtain water from the Lisbon. These wells tap sand beds in the formation at depths ranging from 517 to 731 feet below the land surface. Total depths of the wells range from 596 to 731 feet. Well O-95 had a reported yield of 615 gpm (gallons per minute) in 1948 and well O-174 had a reported drawdown of 84 feet pumping 388 gpm in 1949. The water level in well O-174 was 31.0 feet below the land surface on May 6, 1957.

Water from sands in the Lisbon Formation in the subsurface of the Brewton area will rise, under hydrostatic pressure, to an elevation of about 125 feet above mean sea level. Properly constructed wells will flow if located in areas where the elevation of the land surface is below 125 feet. Well O-147, with a surface elevation of 77 feet above mean sea level, was flowing 180 gpm on March 4, 1957. Wells O-111 in Brewton and V-22 in East Brewton, which tap aquifers in the Lisbon and overlying formations, had flows of 205 and 150 gpm, respectively, in 1957.

Moderate to large quantities of water can be obtained from permeable beds in the Lisbon in most parts of the county. The basal sand, the principal aquifer in the formation, is a potential source of large quantities of water where it is of sufficient thickness and permeability. The Lisbon appears to offer the poorest opportunity for development south of McCullough and Jack Springs and west of the Escambia River in the western part of the county, where the basal sand is thin or absent. The best opportunity for the development of large-capacity wells in the Lisbon is in the east-central part of the county in the Pilgrams Church, Kirkland, Brewton, East Brewton, and Travis School areas and in the westernmost part of the Conecuh National Forest where electric logs of test wells indicate that the basal sand is 30 to 60 feet thick.

GOSPORT SAND

GENERAL FEATURES

The Gosport Sand, the upper formation of the Claiborne Group, takes its name from exposures at Gosport Bluff on the Alabama River a few miles below Claiborne Bluff in Clarke County, Ala. (Cooke, 1926, p. 272). The Gosport crops out in Conecuh and Monroe Counties, dips southward, and underlies all of Escambia County. It overlies the Lisbon Formation and is overlain by the Moodys Branch Formation of the Jackson Group.

THICKNESS AND LITHOLOGY

The Gosport ranges in thickness from 10 to 35 feet and the average thickness, based on records of 61 wells penetrating the formation (table 6), is 19 feet.

The Gosport is composed of greenish-gray iron-stained fine- to coarse-grained abundantly glauconitic sand that contains some granules of gravel. The glauconite is green, brown, and black and has a resinous appearance. The sand in the Gosport is commonly called "greensand" because of the abundant green glauconite. The greensand contrasts sharply with the limestone and marl beds in the overlying Moodys Branch Formation and in the underlying Lisbon Formation.

WATER SUPPLY

The Gosport furnishes water to numerous wells in the central and eastern parts of the county. It is not usually developed separately as an aquifer but does yield water to wells that tap it in conjunction with aquifers in other formations. Wells in the central and eastern parts of the county in which the Gosport is tapped in conjunction with other aquifers are A-4, O-79, Q-18, Q-59, V-9, and V-36.

The sand in the Gosport is generally of uniform grain size, which would indicate a permeable aquifer and a possible source of moderate to large quantity of water to wells.

JACKSON GROUP

The Jackson Group, according to Cooke (1926, p. 274), received its name from exposures at Jackson, Miss. Deposits of Jackson age were at one time grouped with deposits of Vicksburg age into a single formation, the "St. Stephens white limestone". The Jackson Group in this report follows that of MacNeil (1944), and, in ascending order, is divided into the Moodys Branch Formation, the Yazoo Clay, and the Ocala Limestone.

The formations of the Jackson Group crop out to the north in Conecuh and Monroe Counties and underlie all of Escambia County. The rocks comprising the Jackson Group are penetrated at shallow depths in the northeastern part of the county where they are overlain by thin terrace and alluvial deposits. The Jackson Group overlies the Gosport Sand of the Claiborne Group and, downdip, is overlain by the Red Bluff Clay of the Oligocene Series. The Jackson Group has a maximum aggregate thickness of about 180 feet.

MOODYS BRANCH FORMATION

GENERAL FEATURES

The Moodys Branch Formation was named for exposures along Moodys Branch at Jackson, Miss. (Lowe, 1915, p. 79-80). The Moodys

Branch, in the subsurface of Escambia County, overlies the Gosport Sand of the Claiborne Group and underlies the Yazoo Clay.

THICKNESS AND LITHOLOGY

East of the Escambia River, the Moodys Branch ranges in thickness from 35 to 55 feet. The maximum thickness penetrated in the eastern part of the county, 55 feet, was in well A-4 between depths of 145 to 200 feet below the land surface. West of Escambia River, the Moodys Branch cannot be differentiated on electric logs from the overlying Yazoo Clay. The average combined thickness of the formations, based on records of 15 wells penetrating them in this area (table 6), is 70 feet.

The Moodys Branch Formation consists predominantly of light-gray to greenish-gray sandy glauconitic abundantly foraminiferal limestone and marl that contains some beds of glauconitic sand. The upper part of the Moodys Branch and lower part of the overlying Yazoo Clay are lithologically similar. The contact, as selected in the subsurface of Escambia County, is based on the first appearance of the distinctive microfossil *Camerina moodybranchensis* Gravell and Hanna. The local drillers refer to this abundant foraminifer as "water seed" and associate it with a zone that occurs just above the water-bearing Gosport Sand.

The coarse-grained glauconitic fossiliferous iron-stained sand at the top of the underlying Gosport Sand contrasts with the overlying lighter colored limestone and marl at the bottom of the Moodys Branch Formation.

WATER SUPPLY

Beds of glauconitic sand in the Moodys Branch Formation yield water to wells in the eastern half of Escambia County. Aquifers in the formation are seldom tapped in a well as the only source of supply, however, in numerous wells, they are tapped in conjunction with aquifers in adjacent formations. These include, among others, wells A-4, A-7, A-15, A-16, O-85, P-39, R-7, R-9, V-9, and V-36. Because of the multiple aquifer development, the water-bearing properties of the Moodys Branch are only generally known. It is probable that aquifers in the formation would yield only small quantities of water if developed separately.

YAZOO CLAY

GENERAL FEATURES

The Yazoo Clay, a marine deposit, was named for exposures in a bluff along the Yazoo River at Yazoo City, Miss. It crops out to the north and underlies all of Escambia County. The Yazoo overlies the Moodys Branch Formation and is overlain by the Ocala Limestone.

THICKNESS AND LITHOLOGY

The Yazoo Clay is 55 to 75 feet thick east of the Escambia River. It is 55 to 60 feet thick in the subsurface of the Brewton area. A thickness of 70 feet was penetrated in wells D-15, V-9, and V-36 in areas north and south of Brewton. West of Escambia River, the Yazoo Clay and the underlying Moodys Branch Formation cannot be separated with the use of available data. Combined, they have an average thickness of about 70 feet in this area.

The Yazoo is composed predominantly of blue to grayish-green waxy blocky calcareous and noncalcareous silty clay containing some beds of fossiliferous limestone and light-gray sandy marl. The clay is fossiliferous in part. It contains some laminae of fine sand, is fissile, and breaks with a subconchoidal fracture.

The upper part of the Yazoo, in some areas, is composed of sand beds of variable thickness. In well O-150 at Brewton, a white fine- to medium-grained glauconitic sand 23 feet thick is present in the upper part of the formation. East of the Escambia River, the lower 15 to 25 feet of the formation generally consists of alternating beds of limestone, sandy marl, and clay. Available data indicate an increase in the percentage of limestone in the Yazoo west of Escambia River.

WATER SUPPLY

Several wells in the northeasternmost part of the county (grid A on pl. 1) obtain adequate domestic supplies from the sand beds in the upper part and the limestone beds in the lower part of the Yazoo Clay. In this area and in areas as far west as Brewton and possibly Pollard, the sand and limestone beds in the formation contribute some water to wells that also tap aquifers in other formations. The water-bearing properties of the Yazoo are only generally known because of the multiple aquifer development in most wells. It is probable that aquifers in the formation are capable of yielding only small supplies of ground water.

OCALA LIMESTONE

GENERAL FEATURES

The Ocala Limestone, the upper formation of the Jackson Group, was named for exposures in the vicinity of Ocala, Fla., by Dall and Harris (1892, p. 103, 157, 311). The Ocala crops out to the north and underlies all of Escambia County. It is underlain by the Yazoo Clay and is overlain by the Red Bluff Clay of the Oligocene Series. The formation is present at shallow depths in the northeasternmost part of the county near its area of outcrop. It is overlain in that area by terrace and alluvial deposits of the Conecuh and Sepulga Rivers. The Ocala is well exposed beneath these deposits at many places along the channel of the Sepulga River.

THICKNESS AND LITHOLOGY

The Ocala Limestone ranges in thickness from 35 to 60 feet in Escambia County. It consists predominantly of light-gray to cream-colored sandy glauconitic abundantly fossiliferous limestone and calcareous sand with some beds of gray marl. Geologic sections of the Ocala at several localities along the Sepulga River in Escambia County and at Brooklyn in adjoining Conecuh County were described by Cooke (1926, p. 276-277).

WATER SUPPLY

The Ocala is the basal formation of a sequence of calcareous rocks that includes the overlying Red Bluff Clay, the Marianna Limestone, and the Glendon Limestone Member of the Byram Formation, all of Oligocene age. Most wells which penetrate this sequence of beds in Escambia County develop water from the combined aquifers. Consequently, the Ocala, Marianna, and Glendon are here treated as a unit for a discussion of their water-bearing characteristics. The Red Bluff Clay probably does not yield water to wells because of its relatively impervious nature. Their unit thickness, including the Red Bluff Clay, ranges from 65 to 125 feet in the county. The average thickness of these formations, based on records of 49 wells penetrating them in Escambia County (table 6), is 90 feet.

Water is developed from the combined aquifers of the Ocala Limestone only in that part of the county east of Wallace and Foshee. Westward, the rocks are at progressively greater depths and are not penetrated by water wells. Wells east of Wallace and Foshee obtain adequate supplies for domestic, stock, and irrigation use. The most extensive development is in areas underlain by flood plain and terrace deposits and in other lowlands bordering streams. Flowing wells are generally obtained in the lowland areas. Flowing wells P-30 and Q-58 tap the limestones in the eastern quarter of the county. Well P-30 taps the aquifers between 250 to 337 feet below the land surface. Well Q-58 penetrates the combined aquifers at depths of 99 to 195 feet below the land surface. Well V-27, tapping the aquifers south of Brewton, had a measured flow of 85 gpm on December 14, 1954.

Available data indicate that the combined aquifers should yield moderate to large quantities of water to wells in most parts of the county.

OLIGOCENE SERIES

Formations in the Oligocene Series are comprised predominantly of limestone, marl, clay, and calcareous sand of marine origin. They overlie the Ocala Limestone of the Jackson Group and are overlain by undifferentiated deposits of Miocene age.

The Oligocene Series (MacNeil, 1947a) consists, in ascending order, of the Red Bluff Clay, the Vicksburg Group, and the Chickasawhay Limestone. The Vicksburg Group consists of the Marianna Limestone and the Byram Formation which comprises the Glendon Limestone Member at the bottom, a marl facies in the middle, and the Bucatunna Clay Member at the top. The marl facies is included as a part of the Bucatunna Clay Member in this report.

The Red Bluff Clay and the Marianna and Chickasawhay Limestones are not exposed in Escambia County. In the extreme northeastern part, however, the Red Bluff and Marianna are very near the surface, covered only by thin terrace and alluvial deposits. Thin exposures of the Marianna may be present locally where the terrace and alluvial deposits have been removed by erosion. Members of the Byram Formation crop out in the same general area but are undifferentiated on the geologic map (pl. 2).

RED BLUFF CLAY

GENERAL FEATURES

The Red Bluff Clay was named by Hilgard (1860, p. 136) for exposures at Red Bluff on the Chickasawhay River in Wayne County, Miss. He recognized the Red Bluff as a distinct unit underlying the Vicksburg and overlying the Jackson. Later workers, including Cooke (1918, p. 187), treated the Red Bluff as the basal member of the Vicksburg Group. In this report the Red Bluff is included (MacNeil, 1947a) as the basal formation of the Oligocene Series.

The Red Bluff does not crop out in Escambia County. In the northeasternmost part of the county near Teddy, the Red Bluff is overlain by thin terrace and alluvial deposits. In the subsurface it overlies the Ocala Limestone and is overlain by the Marianna Limestone.

THICKNESS AND LITHOLOGY

The Red Bluff Clay in the subsurface of Escambia County, based on electric logs of oil test and water wells, ranges in thickness from 5 to 12 feet.

The Red Bluff consists chiefly of calcareous sandy clay and soft clayey sandy glauconitic limestone. Electric log characteristics of the Red Bluff in Escambia County can be correlated with those of the Red Bluff in the subsurface to the northwest in the Monroeville area, Monroe County, where the formation is of similar thickness and lithology (Ivey, 1957, p. 31-44).

WATER SUPPLY

The Red Bluff is thin and relatively impermeable and is not important as an aquifer in Escambia County. Wells penetrating the Red Bluff tap the limestone aquifers above and below it.

VICKSBURG GROUP

The Vicksburg Group in Alabama was formerly included in the "St. Stephens white limestone" in the underlying Jackson Group. Cooke (1918, p. 187) treated the Vicksburg as being composed, in ascending order, of the Red Bluff Clay, the Marianna Limestone, the Glendon Limestone, and the Byram Marl. MacNeil (1944) restricted the Vicksburg to include the Marianna Limestone and the Byram

Formation. The Byram comprises the Glendon Limestone Member at the bottom and the Butacunna Clay Member at the top. The latter classification is followed here.

MARIANNA LIMESTONE

GENERAL FEATURES

The Marianna Limestone was named for exposures at Marianna, Fla. The Marianna has been used rather extensively as a source of building stone. The white soft limestone hardens upon weathering, and was once used principally for building chimneys. The Marianna is commonly known as "chimney rock" from this usage.

The Marianna is overlain by thin terrace and alluvial deposits in the northeasternmost part of the county. It may be exposed locally in a few small areas where the overlying deposits have been removed by erosion. The Marianna overlies the Red Bluff Clay and is overlain by the Glendon Limestone Member of the Byram Formation.

THICKNESS AND LITHOLOGY

The Marianna Limestone and Glendon Limestone Member of the Byram Formation, because of their similar lithology, are treated as a unit in describing their thickness. They have an average thickness of about 35 feet except in the northwestern part of the county near McCullough and Huxford where they are as much as 60 feet thick.

The Marianna consists of white to cream-colored glauconitic calcareous sand, marl, and chalky limestone interbedded with layers of hard sandy glauconitic limestone. Strata in the upper part of the formation generally consist of alternating hard and soft limestone beds with the harder layers predominating. Strata in the lower part of the formation generally consist of soft calcareous sand containing a few hard layers of limestone near the bottom. The formation is abundantly fossiliferous throughout and in drill cuttings the sand and finely ground fossil fragments have a mealy appearance.

WATER SUPPLY

Solution cavities in the limestone and calcareous sand supply water to domestic, stock, and some irrigation wells in the county. Most wells tapping the Marianna, as described previously, also tap the Glendon Limestone Member of the Byram Formation and the Ocala Limestone. The occurrence and availability of water in this series of aquifers is discussed with that of the Ocala Limestone.

BYRAM FORMATION

GLENDON LIMESTONE MEMBER

GENERAL FEATURES

The Glendon Limestone was named in an unpublished report by Cooke in 1916 (Hopkins, 1917, p. 300) for exposures at Glendon Station, Clarke County, Ala. It was regarded as the upper member of the Marianna Limestone until 1923, when Cooke (p. 3) raised it to the rank of formation. MacNeil (1944, p. 1329) includes the Glendon as the basal member of the Byram Formation. This usage is followed here.

The Glendon crops out in the extreme northeastern part of the county along the margins of the flood plains of the Conecuh and Sepulga Rivers. It is mapped as part of the Byram Formation undifferentiated (pl. 2). It is well exposed at McGowin Bridge in the SW¼ sec. 6, T. 2 N., R. 13 E. (beneath alluvium in the channel of the Conecuh River) and in the NW¼ sec. 6, T. 3 N., R. 13 E., west of well A-4 (pl. 1). Cooke (1926, p. 286) states: "At McGowans Bridge on Conecuh River, in sec. 6, T. 2 N., R. 13 E., 3 miles below the mouth of Sepulga River, the Glendon Limestone forms a wall of rock capped by a flat ledge 12 feet above water. The rock consists of alternating hard and soft ledges of white marly limestone and "horse-bone." The upper part is hard white limestone and is weathered into innumerable tubular cavities. Above the broad ledge which apparently forms the top of the Glendon Limestone ledges of hard, compact glauconitic limestone alternate with softer gray marly limestone for a thickness of about 4 feet. These upper beds probably are of Byram age." The Glendon overlies the Marianna Limestone and is overlain by the Bucatunna Clay Member of the Byram Formation.

The Glendon Limestone Member is more resistant to erosion than the underlying and overlying formations and underlies an area topographically higher than that formed on the Marianna Limestone and the Bucatunna Clay Member.

THICKNESS AND LITHOLOGY

The Glendon Limestone Member has an estimated thickness of 10 to 12 feet in surface exposures. It cannot be separated from the underlying Marianna Limestone in the subsurface because of their lithologic similarity. They have a combined average thickness of about 35 feet in the subsurface of Escambia County.

The Glendon is composed of white to light-brown glauconitic hard crystalline limestone. It is abundantly fossiliferous and resembles a coquina. When weathered, it is nodular in appearance and is filled with a network of irregular tubular cavities as much as 6 inches in diameter. Weathered boulders are locally called "horsebone" because of their resemblance to bleached animal bones. The configuration of the top of the Glendon in the subsurface of Escambia County is shown in figure 6.

The Glendon is the upper part of a sequence of limestones, marls, and calcareous sands that includes the Marianna Limestone and Red Bluff Clay of Oligocene age and the Ocala Limestone of Eocene age.

WATER SUPPLY

Solution cavities in the Glendon Limestone Member are believed to yield small to moderate quantities of water to wells in the county. Almost all the wells that tap the Glendon in Escambia County also tap the Marianna and Ocala Limestones. The occurrence and availability of water in this series of aquifers is discussed with the Ocala Limestone.

BUCATUNNA CLAY MEMBER

GENERAL FEATURES

The Bucatunna Clay was named for exposures along Bucatunna Creek in Wayne County, Miss. The marl facies of the Byram is included in the Bucatunna Clay Member in this report. The Bucatunna is marine in origin.

The Bucatunna crops out in the northeastern part of the county. On the geologic map (pl. 2) it is included as a part of the undifferentiated Byram Formation. The Bucatunna overlies the Glendon Limestone Member of the Byram Formation and is overlain by the

Chickasawhay Limestone where it is present, and by deposits of Miocene age and terrace and alluvial deposits where the Chickasawhay is absent. The Chickasawhay is absent in areas adjacent to the northeastern and north-central borders of the county.

THICKNESS AND LITHOLOGY

The Bucatunna Clay Member, where present in Escambia County, is as much as 100 feet thick. In the eastern part of the county, except in the outcrop and in the Brewton and Bradley areas, it is generally 30 to 65 feet thick. It is 75 to 90 feet thick in the Brewton and Bradley areas. In the western part of the county, the Bucatunna is generally 50 to 70 feet thick except in the Freemanville area where it is at least 100 feet thick.

The Bucatunna consists chiefly of light- to dark-gray and brown generally fossiliferous sandy clay and in some areas marl that contains sand beds and thin beds of gravel and limestone. The Bucatunna is commonly lignitic or carbonaceous. The upper part of the formation in the southwestern part of Brewton consists chiefly of fine-grained glauconitic sand containing some beds of sandy clay. These strata were penetrated between depths of 270 to 326 feet in well O-150 (where the base of the Bucatunna is at a depth of 366 feet) and between depths of 184 to 233 feet in well O-129 (which did not penetrate the total thickness of the Bucatunna). Southwest from Brewton, the upper part of the Bucatunna is predominantly sand at least as far as well W-4 (pl. 1).

WATER SUPPLY

Beds of sand in the upper part of the Bucatunna at Brewton yield small quantities of water to wells. Flowing wells O-129, O-130, and O-145 obtain all or part of their supply from this source. Well O-129 had a hydrostatic pressure of 7.1 feet above the land surface and a flow of 6.0 gpm on May 2, 1955. In most parts of the county, the Bucatunna is relatively impermeable and is not a source of ground water.

CHICKASAWHAY LIMESTONE

GENERAL FEATURES

The Chickasawhay Limestone was named in the guidebook for the eleventh annual field trip of the Shreveport Geological Society (1934, p. 10) for exposures along the Chickasawhay River near Waynesboro, Miss. It was divided into the "Lower Chickasawhay Member" and an "Upper Chickasawhay Member." The name was applied to certain limestones, marls, and clays that were originally included in the Byram Marl by Cooke (1918, p. 196-197). Many sections in Alabama included in the Byram by Cooke are now included in the Chickasawhay. The Chickasawhay Limestone as used by MacNeil (1944, p. 1346) includes only the "Lower Chickasawhay Member" as designated in the guidebook. It is considered equivalent to the upper part of the Suwannee Limestone in Florida.

The Chickasawhay is overlapped by deposits of younger age and does not crop out in Escambia County. Where present in the subsurface, it overlies the Bucatunna Clay Member of the Byram Formation and is overlain by undifferentiated deposits of Miocene age. The Chickasawhay, based on electric, sample, and drillers' logs of numerous oil and water test wells, is overlapped and absent in the Teddy, Dixie, Fishpond, Kirkland, and Damascus areas in the northeastern part of the county.

THICKNESS AND LITHOLOGY

The Chickasawhay Limestone, where present, is as much as 70 feet thick in Escambia County. The formation generally is 10 to 25 feet thick in the eastern part of the county, 25 to 50 feet thick in the central part, and 40 to 70 feet thick in the western part.

The Chickasawhay, except in the Wallace and Brewton areas, consists chiefly of brown and gray dolomitic sandy porous fossiliferous limestone. Layers of dark-blue and greenish-gray sandy silty clay are generally interbedded with the limestone. The Chickasawhay is overlain by clay at the base of the Miocene.

In the Wallace area in the north-central part of the county, the Chickasawhay consists chiefly of alternating hard and soft layers of calcareous sand. In an area apparently confined to the southern part of Brewton, the Chickasawhay is predominantly sand.

The lower 25 feet of the formation, as penetrated in well O-150, consists of fine-grained sand.

WATER SUPPLY

Relatively few wells tap the Chickasawhay as a source of supply in Escambia County. Solution cavities are known to occur in the limestone only in the north Brewton area, however, it is probable that they occur elsewhere. Most wells tapping the formation are in the Brewton and Wallace areas and all are used for domestic and farm supplies. Solution cavities in the limestone in north Brewton yield small to moderate quantities of ground water to wells. Well O-76 taps a cavity in the limestone at a depth of 180 to 183 feet below the land surface. The well was pumped on January 5, 1957, at 20 gpm for 4 hours and had a drawdown of 7.6 feet. Flowing wells O-129 at Brewton and F-24 at Wallace tap sand beds in the Chickasawhay for all or part of their source of supply.

MIOCENE SERIES UNDIFFERENTIATED

GENERAL FEATURES

The Miocene deposits of Alabama were called the "Grand Gulf Strata" by Smith and others (1894, p. 97-99). MacNeil (1946a) divided the Miocene of the Coastal Plain of southern Alabama into two formations, the Paynes Hammock Sand at the bottom and the Catahoula Sandstone at the top. Miocene strata are not differentiated in this report.

Southern Alabama is the transition zone between the generally nonfossiliferous deltaic brackish-water and fluvial clastic Miocene deposits of Mississippi and the fossiliferous brackish-water and shallow marine clastic deposits of the Florida Panhandle (Toulmin, 1955a, p. 226). In Escambia County, most of the Miocene deposits are generally nonfossiliferous and appear to consist chiefly of fluvial nonmarine deposits.

Upland areas underlain by the Miocene deposits are characterized by a rolling to hilly topography. These uplands support large stands of timber with old field and long leaf pine predominating.

The undifferentiated Miocene deposits crop out extensively in eastern and central Escambia County (pl. 2). They dip south and southwest 12 to 15 feet per mile. In the western part of the county, they are exposed in and along Little Escambia Creek and Escambia River and their tributaries. The Miocene deposits overlie the Chickasawhay Limestone except in the northeastern and north-central parts of the county where they overlap the Chickasawhay and rest on the Bucatunna Clay Member of the Byram Formation. The Miocene Series is overlain by the Citronelle Formation of Pliocene age.

Good exposures of the Miocene are observed in road cuts and on the slopes of stream valleys. Excellent exposures are located along U.S. Highway 31 southwest of Brewton.

THICKNESS AND LITHOLOGY

The undifferentiated Miocene Series crops out extensively in the eastern, central, and northwestern parts of the county (pl. 2). The thickness of the Miocene becomes progressively greater toward the south and southwest, and in the southwesternmost part of the county it is about 650 feet thick. The Miocene deposits in the eastern part of the county, where present, are as much as 265 feet thick. The approximate thickness of the Miocene at several localities along U.S. Highway 31 trending southwestward from Brewton are: Pollard, 350 feet; Flomaton, 400 feet; Wawbeek, 540 feet; Canoe, 560 feet; and Atmore, 560 feet. In the westernmost part of the county, the thickness ranges from 520 to 560 feet except near Freemanville and Nokomis where it is about 650 feet thick.

The Miocene consists chiefly of sand, sandy clay, and clay with subordinate beds of gravel. Mica and lignite are common and in some places the deposits are sparsely to moderately fossiliferous. Sandstone layers, some limonite cemented, with thicknesses of a few inches to several feet are interbedded with sand and clay in some areas. The sand consists chiefly of fine- to coarse-grained subangular to rounded quartz. The clay is usually referred to as "chalk" by drillers operating in the Escambia County area. The sands, sandstones, and clays are predominantly light gray to white but are commonly varicolored or mottled. The typical Miocene strata, as described above, are easily differentiated from the underlying sandy limestones and sandstones of Oligocene age in the subsurface of most of the county. However, in T. 2 N., R. 11 E. and in and near the western half of the Conecuh National Forest in eastern Escambia County, strata comprising the basal part of the Miocene Series are very similar in composition and character to those in the underlying Chickasawhay Limestone. A sequence of alternating sandstone, sandy limestone, silt and silty clay beds comprise the basal part of the Miocene and the upper part of the Chickasawhay. This sequence is generally 60 to 75 feet thick, but in and near the vicinities of Camp Williams and Roberts it thickens to as much as 150 feet. The thickness of the sequence apparently increases in areas to the south and southwest. It is not differentiated and is included here in the Miocene Series.

WATER SUPPLY

Many wells obtain water for domestic and stock use from beds of sand and gravel in the Miocene Series in Escambia County. Sands with thicknesses of 5 to 25 feet in the eastern part of the county are poorly sorted and clayey and yield only small to moderate quantities of water to wells in that area.

Sand beds in the Miocene thicken and become more permeable in south-central and southwestern parts of the county. Individual beds, 40 to 55 feet thick, yield moderate to large quantities of water to wells. Wells O-162, W-4, and W-5 tap the Miocene and are sources of industrial supply. Well O-162, screened opposite sand 177 to 217 feet below the land surface, reportedly had a drawdown in water level of 24 feet when test pumped at 100 gpm for 8 hours on April 1, 1951. Well W-4 taps the basal Miocene sand and underlying aquifers in the Glendon Limestone Member of the Byram Formation, and the Marianna and Ocala Limestones. The Miocene is believed to be the principal aquifer tapped by the well. It was test pumped at 450 gpm for 24 hours with a drawdown in water level of 105.5 feet on July 9, 1956. The water level prior to pumping was 1.8 feet below land surface. The specific capacity determined by pumping was 4.3 gpm per foot of drawdown. Well W-5 is screened opposite sand in the Miocene Series at a depth of 241 to 256 feet below the land surface. It was test pumped at 43 gpm on February 22, 1957.

Flows are obtained by wells at Pollard that tap the Miocene at depths generally ranging from 50 to 310 feet below the land surface. The top of the basal sand of the Miocene in well W-98 at

Pollard is at a depth of 240 feet. The basal aquifer of the Miocene cannot be traced west of the Pollard area.

Flomaton municipal wells X-106 and X-107, with depths of 143 and 148 feet, respectively, develop large supplies of water from the Miocene. Well X-106, screened opposite sand at depths of 102 to 143 feet, had a reported drawdown of 15 feet when test pumped at 760 gpm for 1 hour. Municipal well Z-73 at Atmore taps sand in the Miocene at a depth of 208 to 261 feet. It was pumped at 463 gpm on April 24, 1957.

Wells used as a source of water supply for domestic and stock use obtain water from the Miocene in the area north of U.S. Highway 31 between Brewton and the Escambia River. Data are insufficient to determine the water-bearing potential of Miocene sands in the area. Drillers' logs indicate that clays are predominant in the upper Miocene and that the sand beds are relatively thin.

Two wells of large capacity tap the Miocene deposits west of Escambia River. Well H-68, used principally for irrigation, is screened opposite Miocene sand at depths of 228 to 253 feet and from 266 to 281 feet. The well had a drawdown of 19.4 feet after being pumped at 323 gpm for 24 hours in July 1957. Well K-1 at the Atmore State Prison Farm taps Miocene sand at a depth of 118 to 172 feet. It reportedly yields 250 gpm. Yields comparable to those obtained from wells H-68 and K-1 probably can be obtained from the Miocene deposits in most parts of the county west of Escambia River.

PLIOCENE SERIES

The Pliocene Series in Escambia County comprises the Citronelle Formation. Erosion of the older Miocene surface into a series of broad, shallow valleys was followed in later Pliocene time by deposition of the Citronelle. The stream-deposited Citronelle, composed predominantly of coarse-grained sediments, filled the eroded valleys and formed a broad plain that may have covered the entire county. Subsequent dissection by streams reduced the areal extent of the original broad plain in Escambia County (pl. 2).

CITRONELLE FORMATION

GENERAL FEATURES

The Citronelle Formation was named by Matson (1916, p. 168) for exposures at Citronelle, a town in the northern part of Mobile County, Ala. The formation is equivalent, in part, to deposits formerly classified as "drift," "orange sand," and "Layfayette."

The Citronelle consists chiefly of sand, clay, and gravel derived from the erosion of older Coastal Plain sediments. The formation dips southward 5 to 8 feet per mile. It unconformably overlies the undifferentiated deposits of Miocene age and is overlain by terrace and alluvial deposits of Pleistocene and Recent age. Good exposures of the Citronelle are common in Escambia County. The outcrop of the formation is most extensive west of Little Escambia Creek. East of Little Escambia Creek, the formation consists of small irregular outliers. The distribution of the formation in the county is shown on plate 2.

The land surface formed on the formation is typically flat to gently rolling and is used extensively for farming. The major soil types, red and brown fine sandy loam, are well suited for diversified agriculture. They are utilized chiefly for the production of cotton, corn, and potatoes, and for pasture land.

THICKNESS AND LITHOLOGY

The Citronelle Formation in Escambia County, where present, is as much as 140 feet thick. The thickness varies little in a given area because of the relatively flat topography and the low dip of the beds.

The Citronelle is best developed in the county west of the Escambia River where its average thickness is probably greater than 100 feet. The maximum thickness, 140 feet, was penetrated in an oil test well near Atmore. A thickness of 135 feet was penetrated in well Z-73 at Atmore.

The Citronelle Formation in Escambia County consists chiefly of sand and gravel with subordinate beds or lenses of clay. The sand is locally crossbedded and generally consists of fine to very coarse grained rounded to subangular quartz. The clays are generally lenticular. Sand and clay in the formation are white to gray except where weathered.

WATER SUPPLY

The Citronelle Formation is the principal source of water supply in the western part of Escambia County. Beds of sand and gravel supply small to large quantities of water to many wells throughout the area. The formation also furnishes water to domestic and stock wells in the eastern part of Escambia County.

Industrial and public supply wells obtain moderate to large quantities of water from the Citronelle in western Escambia County. Public supply well J-7 at McCullough had a reported yield of 30 gpm in 1951. Basal sands and gravels in the formation yield large quantities of water to municipal wells Z-71 and Z-72 at Atmore. Well Z-72, tapping coarse sand and gravel at a depth of 100 to 129 feet below the land surface, had a measured yield of 333 gpm on April 24, 1957.

Wells developed in the Citronelle at depths less than 65 feet are generally under water-table conditions while those developed at greater depths below layers of confining clay are under artesian conditions. However, there are no flowing wells in the Citronelle in Escambia County.

The yield of wells in the Citronelle varies in different areas and is dependent upon such factors as the permeability and the thickness of the saturated aquifer. In most areas west of the Escambia River, yields comparable to those obtained at Atmore probably could be obtained by properly constructed wells tapping the basal part of the formation. Permeable beds above the basal sand would be a source of moderate supplies in the same area.

PLEISTOCENE AND RECENT SERIES

GENERAL FEATURES

Terrace deposits of Pleistocene age and river alluvium of Recent age occur in and adjacent to stream channels in Escambia County. These deposits overlie, in places, all formations of older age that crop out in or near major streams and tributaries in Escambia County. Sediments that comprise these deposits were, for the most part, derived from the erosion of older rocks of Tertiary age. The unconsolidated sediments, consisting chiefly of sand, gravel, silt, and clay, were deposited as alluvium in the stream channels.

Pleistocene terrace deposits are benchlike surfaces which occur at elevations above the present flood plain. They are remnants of older flood plains formed by streams that occupied the valleys during earlier stages of development. The ancient streams incised to lower elevations leaving portions of their former flood plains at higher elevations as terraces. The highest terrace, therefore, is the oldest flood plain.

Terrace and alluvial deposits are present in lowland areas commonly known as "first, second, and third bottoms." The flood plain occupies the first bottom. It is generally a sparsely settled low swampy area covered by a dense growth of vegetation. The poorly drained gray soils support corn, sugar cane, or cattle. The terraces (second and third bottoms) are flat to slightly rolling surfaces underlain by gray sandy loam soils. These soils are best suited for growing timber, corn, sugar cane, and cotton. The terrace deposits and alluvium are differentiated on the geologic map (pl. 2).

Two or more terraces have been identified above the present flood plains in Escambia County. The terraces were not differentiated on the geologic map (pl. 2) because adequate topographic control was not available. They are most extensive and best developed along the Sepulga and Conecuh Rivers and it is only along these waterways that the deposits were mapped. Terrace deposits along other streams and tributaries in the county were not mapped because of their limited extent and thickness.

THICKNESS AND LITHOLOGY

Alluvial deposits near the junction of Conecuh River and Murder Creek in secs. 6 and 7, T. 1 N., R. 10 E., based on 29 shallow test borings, had an average thickness of about 30 feet and a maximum thickness of 55 feet. This thickness is believed to be similar to that of alluvial deposits immediately adjacent to major streams in the area. The alluvial deposits thin to a featheredge at the margins of the flood plains. The thickness of the terrace deposits is believed to be similar to that of the alluvium.

The alluvial and terrace deposits are similar in lithology and consist chiefly of varicolored unconsolidated sand, gravel, silt, and clay. The deposits are generally micaceous and the alluvial deposits appear to be more clayey along the margins of the flood plains. The sand is fine to coarse grained and poorly sorted.

WATER SUPPLY

Small supplies of water adequate for domestic and stock use are obtained from shallow wells penetrating beds of sand and gravel in river alluvium and terrace deposits in Escambia County. Moderate quantities can probably be obtained from beds of sand and gravel that are of sufficient thickness. Most of the wells are constructed with small diameter casing with attached sand point or screen. They are generally equipped with pitcher or small electric pumps.

Moderate to large quantities of water may be available in some areas by induced filtration where there is a hydraulic connection between the stream bed and the unconsolidated aquifer. To obtain the additional supplies, the normal slope of the water table from the alluvium to the stream would be reversed by pumpage to allow recharge from the stream to the aquifer.

GROUND WATER

SOURCE

Ground water is the water below the land surface that occurs in a zone where the enclosing material is fully saturated. The top of the saturated zone is called the water table, and its position is shown by the level at which water stands in nonartesian wells. Only that part of the subsurface water that lies beneath the water table in the zone of saturation can be pumped from wells or will flow from springs. Ground water is derived from precipitation, and in Alabama the precipitation is principally rain. A part of the precipitation flows into streams and lakes as direct runoff, a part returns to the atmosphere through evaporation and transpiration, and a part seeps downward through the soil and rocks to become ground water. A classification of the divisions of subsurface water is shown in figure 7.

Water seeping down through the soil first enters the zone of aeration which lies between the land surface and the zone of saturation. A part of the water entering the zone of aeration is used to satisfy soil-moisture requirements, being held in this zone by molecular forces which counteract the force of gravity, and a part seeps to the water table and into the zone of saturation. All openings in the zone of saturation are filled with water, and it is the water in this zone that can be obtained by wells and that flows from springs.

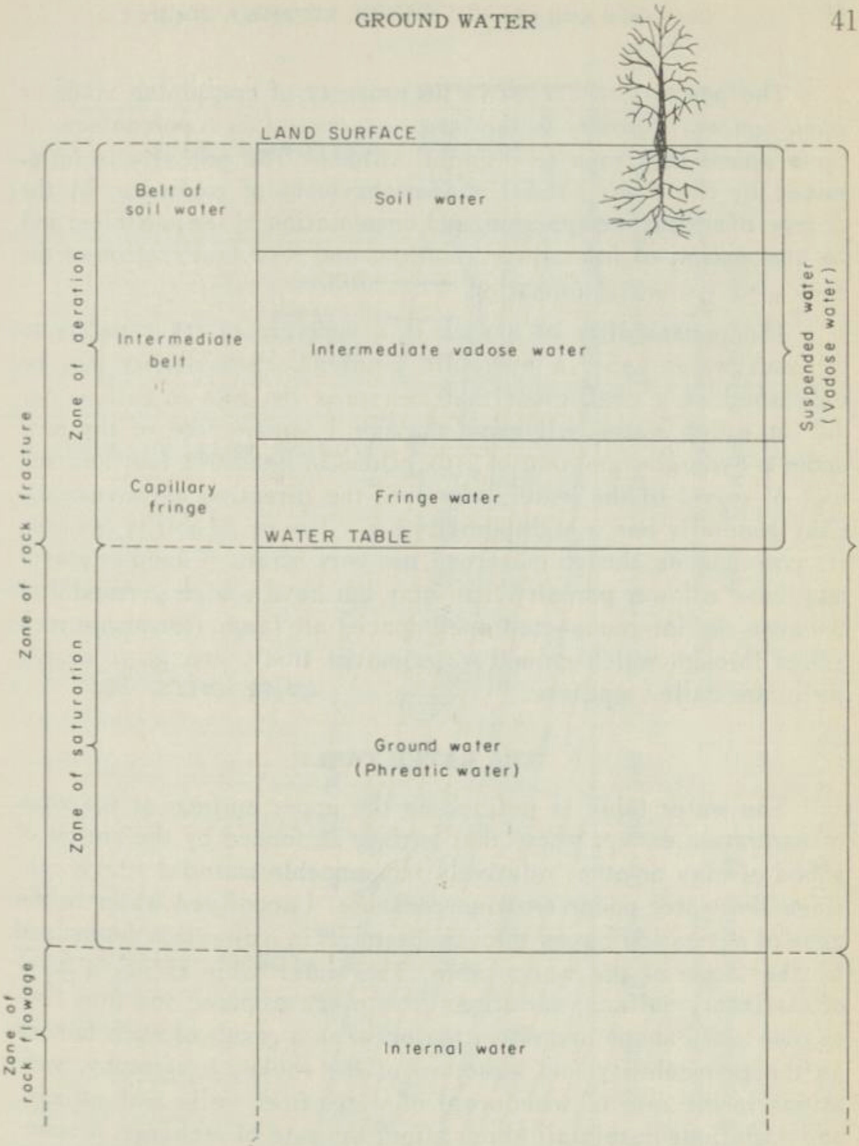

LAND SURFACE
Belt of soil water
Soil water
Zone of aeration
Intermediate belt
Intermediate vadose water
Suspended water (Vadose water)
Zone of rock fracture
Capillary fringe
Fringe water
WATER TABLE
Interstitial water
Zone of saturation
Ground water (Phreatic water)
Zone of rock flowage
Internal water

Figure 7.—Diagram showing divisions of subsurface water.

OCCURRENCE AND STORAGE

Ground water occupies pores, fractures, and solution openings in the rocks. The size, shape, and distribution of the openings in the rocks vary considerably from place to place and from rock type to rock type, and they control the storage and movement of ground water.

The porosity of a rock is its property of containing voids or open spaces. Porosity is the ratio, expressed as a percentage, of open space in a rock to its total volume. The porosity is influenced by the size, shape, and arrangement of particles; by the degree of sorting, compaction, and cementation of the particles; and by the amount of fracturing, solution, and recrystallization of the rock after its initial formation.

The permeability of a rock is a measure of its capacity to transmit water under a hydraulic gradient. Permeability may be expressed as a coefficient that measures the rate in gallons per day at which water will move through 1 square foot of the rock under a hydraulic gradient of 1 to 1 (loss of head of 1 foot for each foot of travel of the water, whatever the direction of movement). Clay generally has a high porosity but a low permeability because its pore spaces, though numerous, are very small. A sand or gravel may have a lower porosity than clay but have a high permeability because the interconnected open spaces are large. Permeable rock zones through which ground water moves freely enough to supply wells are called aquifers.

THE WATER TABLE

The water table is defined as the upper surface of the zone of saturation except where that surface is formed by the bottom of a bed of clay or other relatively impermeable material which confines the water under artesian pressure. Unconfined water in the zone of saturation moves through the rocks in a direction determined by the slope of the water table. The water table is not a level or stationary surface; variations from place to place and from time to time in its shape and elevation occur as a result of such factors as the permeability and structure of the rocks, topography, variations in the rate of withdrawal of water from wells and springs, and variations in rainfall which affect the rate of recharge. A schematic diagram showing artesian and water-table conditions is shown in figure 8.

Water-table conditions prevail in Escambia County in beds of sand and gravel in alluvial and terrace deposits along the rivers and their larger tributaries and in the outcrop areas of the various formations. Wells less than 65 feet deep generally tap aquifers that are controlled by water-table conditions. The water levels in these wells fluctuate in response to or a lack of precipitation and many have gone dry during prolonged drought.

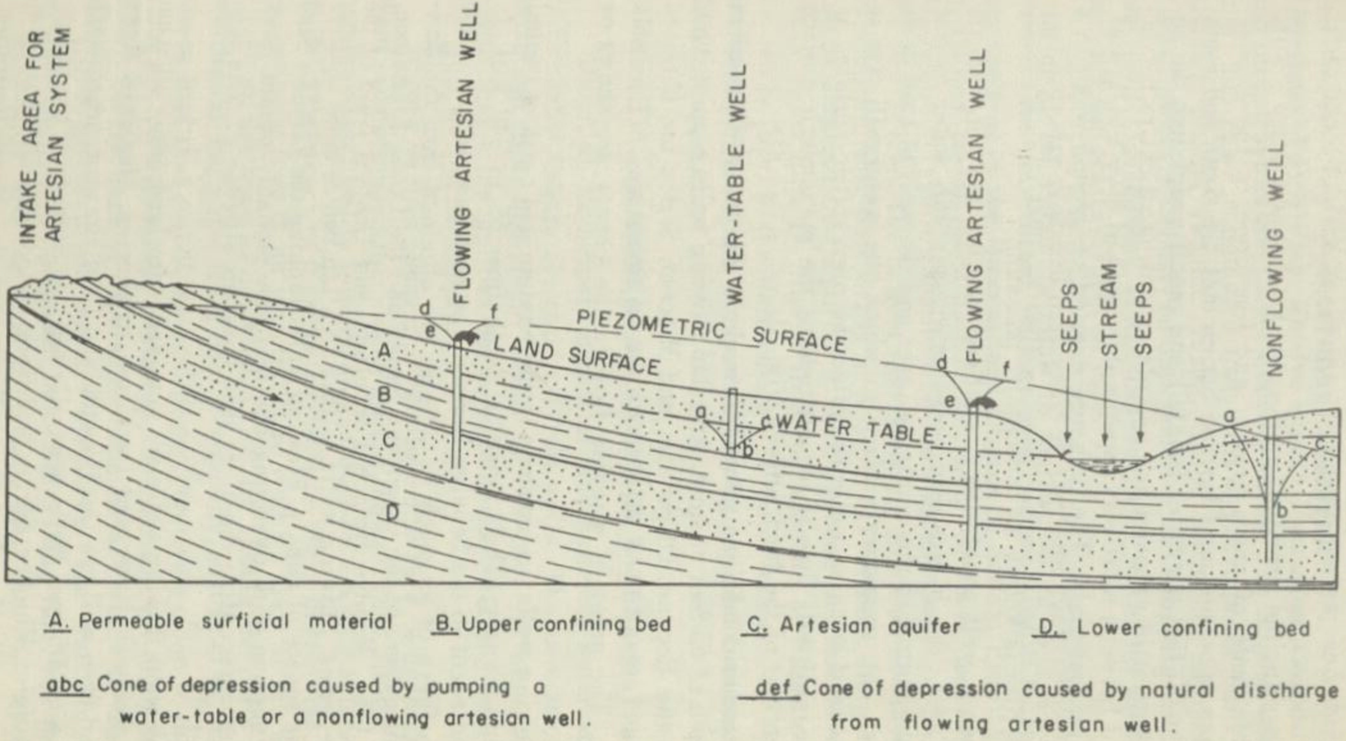

INTAKE AREA FOR ARTESIAN SYSTEM
FLOWING ARTESIAN WELL
WATER-TABLE WELL
FLOWING ARTESIAN WELL
SEEPS
STREAM
SEEPS
NONFLOWING WELL
PIEZOMETRIC SURFACE
LAND SURFACE
WATER TABLE
A
B
C
D
a
b
c
d
e
f
A. Permeable surficial material
B. Upper confining bed
C. Artesian aquifer
D. Lower confining bed
abc Cone of depression caused by pumping a water-table or a nonflowing artesian well.
def Cone of depression caused by natural discharge from flowing artesian well.

Figure 8.—Schematic diagram showing artesian and water-table conditions.

ARTESIAN CONDITIONS

The principal artesian aquifers in Escambia County are the permeable beds of sand, gravel, and limestone in the Eocene, Oligocene, Miocene, and Pliocene Series that dip south and southwest 5 to 50 feet per mile. Rainfall and runoff seeps into the aquifer where it is exposed and percolates downgradient to become confined between relatively impermeable beds of clay, chalk, marl, or similar materials. The pressure exerted on ground water in a confined aquifer by the weight of water at higher levels in the same aquifer is known as hydrostatic pressure.

When a well penetrates a confined aquifer downdip from its intake area, the hydrostatic pressure causes the water to rise above the bottom of the confining layer and the well is said to be artesian. The imaginary surface to which the water will rise in tightly cased artesian wells is called the piezometric surface. An artesian well will flow if the altitude of the piezometric surface is above that of the land surface (fig. 8).

Artesian conditions prevail throughout the county in aquifers at a depth of 65 feet or more. Artesian flowing wells tapping aquifers in the Eocene, Oligocene, and Miocene Series are obtained in lowland areas in and adjacent to the major streams in Escambia County. The areas of artesian flow in the county are shown on plate 1.

Flowing wells are common in the eastern and parts of central Escambia County. They range in depth from 65 to 940 feet. In areas adjacent to the Sepulga River in the northeastern part of the county, flows of as much as 20 gpm are obtained from the Marianna Limestone of the Oligocene Series and the Ocala Limestone, Yazoo Clay, Moodys Branch Formation, and Gosport Sand of the Eocene Series. Flowing wells in this area tap two or more aquifers for their source of supply. Flowing wells tapping the Gosport Sand in conjunction with overlying aquifers can probably obtain flows in areas adjacent to the river that have an altitude of less than 150 feet.

Numerous flowing wells are obtained in lowland areas adjacent to the Conecuh River and its larger tributaries. Measured flows obtained from wells in the Brewton and East Brewton areas range from 0.4 to 205 gpm. Wells generally tap two or more of the following aquifers: Miocene Series undifferentiated; the Chickasawhay Limestone, Glendon Limestone Member of the Byram Formation, and Marianna Limestone in the Oligocene Series; and the Ocala Limestone, Yazoo Clay, Moodys Branch Formation, Gosport Sand, and Lisbon Formation in the Eocene Series. The largest measured flow, 205 gpm, is obtained from well O-111 tapping the Lisbon, Gosport, Moodys Branch, Yazoo, Ocala, Marianna, and Glendon. Large flows can probably be obtained from wells tapping the Lisbon and overlying aquifers in the Brewton area where the altitude of the land surface is 85 feet or less.

Flows are obtained from wells in the flood plain of Little Escambia Creek at Pollard, Wallace, and Foshee. Most of these wells tap aquifers in the Miocene and Oligocene Series. Flowing wells at Pollard are as much as 600 feet deep, however, most of them tap relatively shallow aquifers in the Miocene Series at depths of 100 feet or less. The largest flow, from the Miocene, about 60 gpm, is obtained from well W-132 at a depth of 100 feet. Larger flows can be obtained from aquifers in the Oligocene and Eocene Series. Wells which formerly flowed from the Miocene at Flomaton have ceased to flow. In the Wallace area, flows of as much as 11.5 gpm are obtained from the Miocene deposits and the Chickasawhay, Glendon, Marianna, and Ocala.

METHODS OF RECOVERY OF WATER

Almost all municipal, industrial, and domestic water supplies in Escambia County are obtained from wells. The amount of water withdrawn from individual wells in the county, when needed, varies from a few gallons per minute for domestic supply to about 800 gpm for public supply.

When a well is pumped or is allowed to flow, a hydraulic gradient is established that slopes toward the well from all directions, and the water level is lowered around the well causing a depression in the water table or piezometric surface. This depression, in the approximate form of an inverted cone with its apex at the well, is known as the cone of depression (fig. 8). During the early part of withdrawal, the water level declines rapidly, and most of the water comes from that part of the aquifer comparatively close to the well. However, as withdrawal continues, the water level declines more slowly as the cone of depression expands and water moves to the well from progressively greater distances. The water level will continue to decline, although at a diminishing rate, and the cone of depression will continue to expand until the cone eventually extends to the limits of the aquifer, unless sufficient natural discharge is salvaged or sufficient recharge induced to halt its expansion.

The specific capacity of a well is an index to its productivity, and is defined as its rate of discharge per unit of drawdown. Specific capacity is ordinarily determined by dividing the discharge of the well, in gallons per minute, by the drawdown, in feet, and is expressed in gallons per minute per foot of drawdown.

WATER-LEVEL FLUCTUATIONS AND THEIR SIGNIFICANCE

Fluctuations of the water levels in wells can be correlated with recharge or lack of recharge, withdrawals by pumping or by natural flows from springs and wells, barometric fluctuations, ocean and earth tides and other loading of the earth's crust, and earthquakes. Shallow water-table wells and springs respond with rising water levels or increased spring flows a few hours or days after precipitation and with declining water levels or decreased flows during drought. The intensity and duration of rainfall and the permeability of the soil and underlying rock affect the amount of water that infiltrates as recharge to cause variations in water levels. The best recharge conditions usually occur with moderately intense rains of long duration. Heavy downpours of short duration afford little opportunity for maximum recharge because most of the water not retained in the soil is lost to surface runoff.

The seasonal fluctuations of water levels in shallow wells in Escambia County are cyclic and are related directly to rainfall. The average monthly precipitation is greatest in March, April, July, and August. The period of highest water table generally occurs in March and April because of the continuous and large amount of recharge from the rains and the low evaporation and transpiration rates. The water table is generally lowest in October and November when the precipitation is least.

Water levels in eight wells in Escambia County were measured monthly and biweekly during 1955, 1956, and 1957. Of these wells, one taps the Yazoo Clay in the Eocene Series, two tap the Ocala and Marianna Limestones and the Glendon Limestone Member of the Byram Formation in the Eocene and Oligocene Series, one taps the Chickasawhay Limestone in the Oligocene Series, two tap the Citronelle Formation in the Pliocene Series, and two tap terrace deposits in the Pleistocene Series. Hydrographs of wells tapping the Eocene and Oligocene Series are shown on figure 9 and those tapping the Pliocene and Pleistocene Series are shown on figure 10. The water-level fluctuations in these wells can be correlated with precipitation.

Available data indicate that declines in water levels in Escambia County have not been significant except in areas of heavy withdrawal for municipal and industrial use or in areas of artesian flow. Many artesian wells have ceased to flow owing to declines in artesian pressures caused by continuous discharge for long periods of time. It is estimated that more than 2 million gallons per day of ground water flows to waste in Escambia County. Many of the flowing wells are not equipped with valves to regulate the flows.

MUNICIPAL SUPPLIES

Wells are the principal source of water supply for industries and municipalities at Atmore, Brewton and East Brewton, Flomaton, and Pollard. Most wells in the smaller communities and rural areas are privately owned and furnish water principally for domestic and farm use. Most privately owned wells are of small diameter and tap sand and gravel beds at depths generally less than 100 feet.

ATMORE

Municipal and most industrial water supplies in Atmore are obtained from three public supply wells, two tapping the Citronelle Formation and one tapping the underlying undifferentiated Miocene Series.

Well Z-72, the oldest municipal well in operation at Atmore, was drilled in 1932. It is cased to 100 feet and screened from 100 to 129 feet opposite coarse sand in the Citronelle Formation. Well Z-71, drilled in 1935, taps the Citronelle at a depth of 100 to 120 feet. Well Z-73, drilled in 1948, taps sand and gravel in the Miocene Series at a depth of 208 to 261 feet. During an aquifer test on April 24, 1957, wells Z-72 and Z-73 were pumped at average rates of 333 and 463 gpm, respectively. Water obtained from the wells, based on the results of chemical analyses (table 5), is of good quality being soft, slightly acidic, and low in chloride content. The iron content, 0.3 ppm for wells Z-71 and Z-72, if untreated, may be objectionable for some uses.

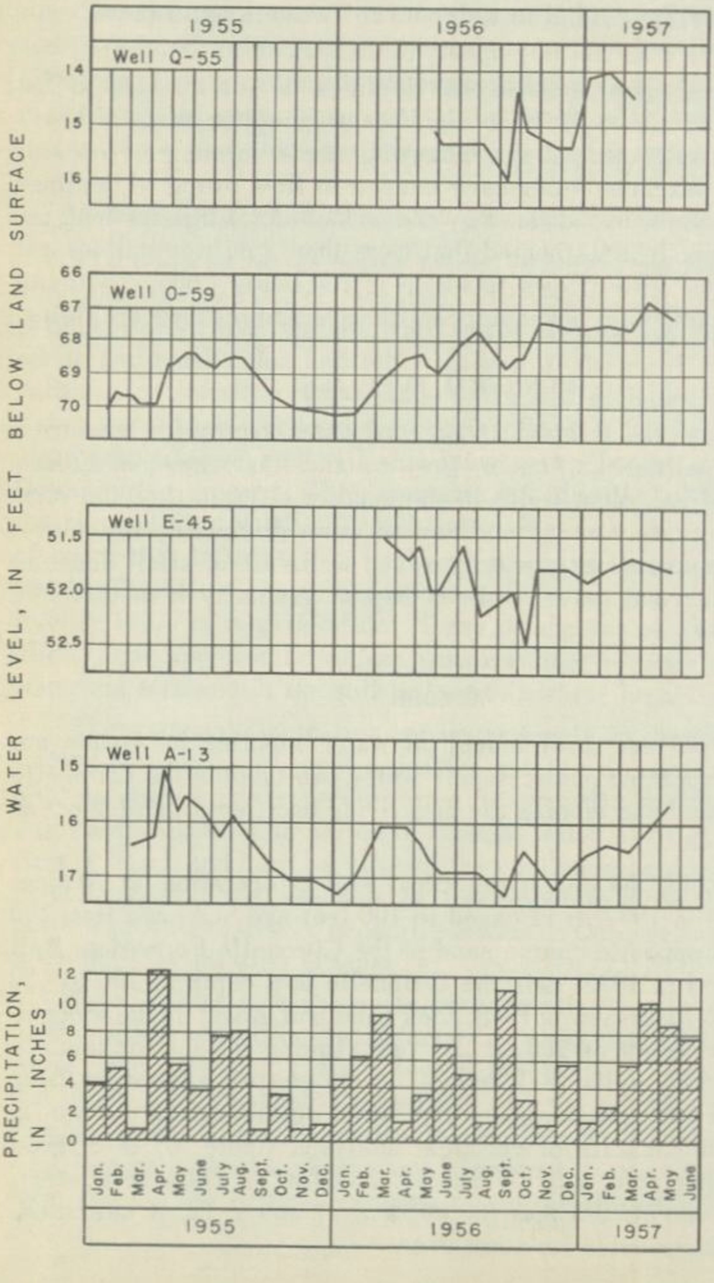


Figure 9.—Fluctuation of water levels in wells A-13, E-45, O-59, and Q-55 tapping the Eocene and Oligocene Series, and monthly precipitation at Brewton.

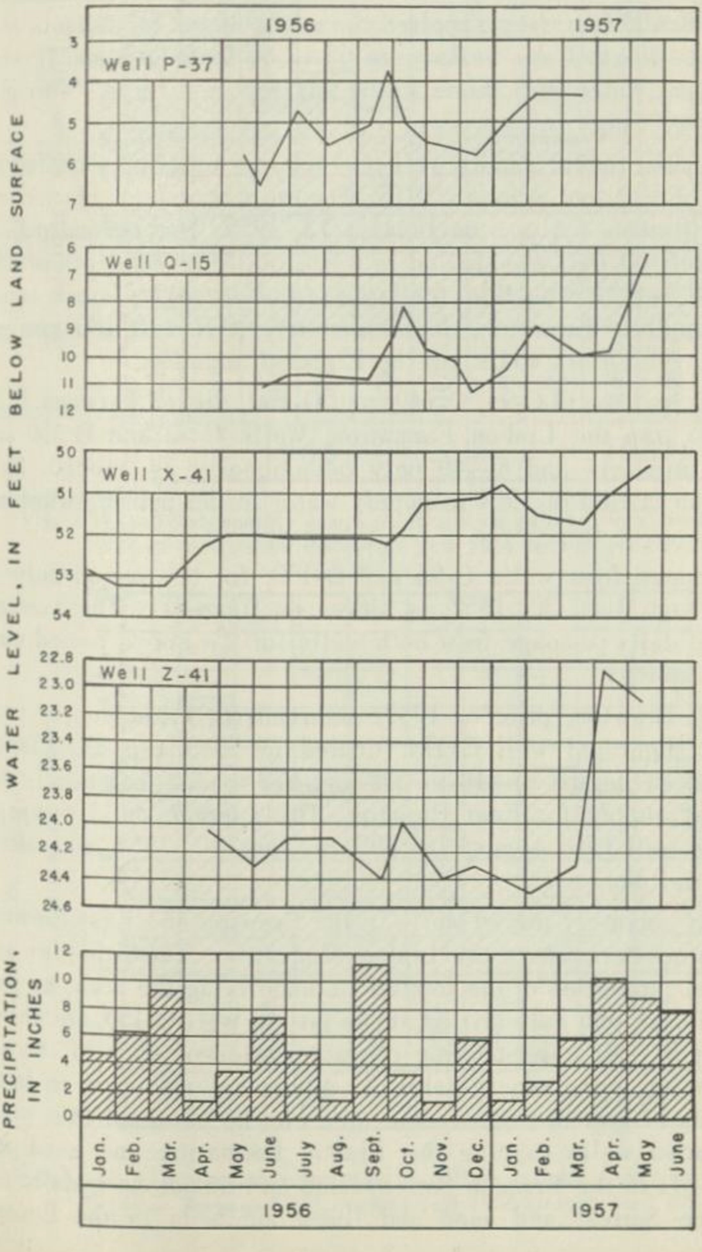


Figure 10.—Fluctuation of water levels in wells P-37, Q-15, X-41, and Z-41 tapping the Pliocene and Pleistocene Series, and monthly precipitation at Brewton.

BREWTON AND EAST BREWTON

Information on ground water in the Brewton area was first published in 1907 (Smith, p. 269-271). Smith reported that numerous wells 40 to 400 feet deep supplied the needs of the inhabitants and industries. Most of the wells were 65 to 80 feet deep and flowed 2 to 5 gpm. Water from these wells was reported to be "strongly chalybeate" (high in iron).

The first public supply well (O-146) was reportedly drilled to a depth of 940 feet prior to 1915. The well was later abandoned and was flowing 6.1 gpm on January 13, 1955. The second public supply well (O-147) was drilled in 1915 to a reported depth of 633 feet. The well, not used as a source of public supply since about 1953, supplies water to a local industry. It flowed 180 gpm on March 4, 1957. Both wells tap the Lisbon Formation.

Municipal wells O-95, O-140, and O-150, drilled between 1929 and 1955, tap the Lisbon Formation. Wells O-95 and O-150 are pumped regularly and O-140 only occasionally as needed. Well O-141 was drilled in 1954 to supply water to the public swimming pool.

Pumpage from wells O-95 and O-150, for the period July 1, 1956 through June 30, 1957, is shown on figure 11. The average combined daily pumpage from both wells for the above period was 395,300 gallons.

East Brewton, prior to 1949, obtained its water supply from Brewton. Municipal well O-174, drilled in 1949, taps the Lisbon Formation at depths of 618 to 638 and 679 to 709 feet and is the source of supply for East Brewton. The average daily pumpage from this well from August 16, 1955 to June 10, 1957, was about 133,000 gallons.

Many privately owned wells in the Brewton and East Brewton area tap aquifers above the Lisbon Formation. The lithology and electrical properties of the formations underlying the area, as penetrated in the test hole drilled at the site of well O-150, are shown in figure 5. The water-bearing characteristics of each of the geologic units are given in table 1. Additional moderate to large quantities of ground water in the area can be obtained from properly spaced wells tapping the Lisbon Formation and sand and gravel beds in the Miocene Series, sand and limestone beds in the Oligocene Series, and sand and limestone beds in the Eocene Series.

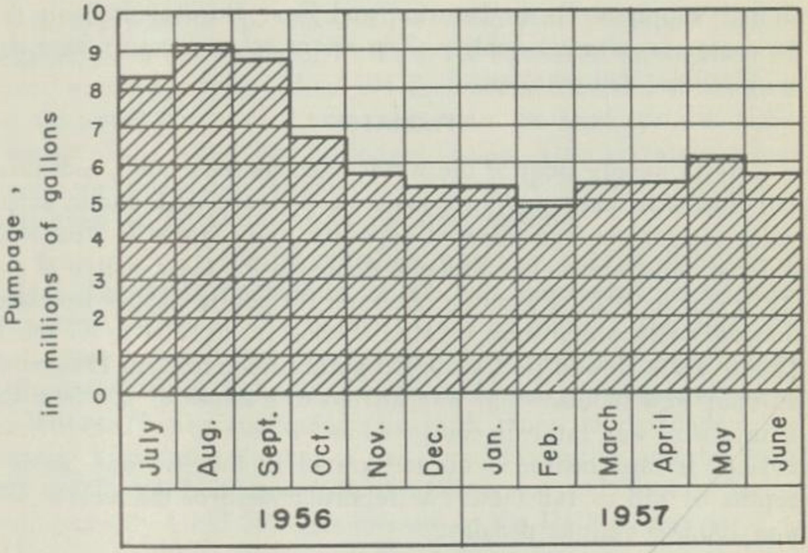


Figure 11A.—Total monthly pumpage, in million gallons, from municipal well O-95 at Brewton for the period July 1956 through June 1957.

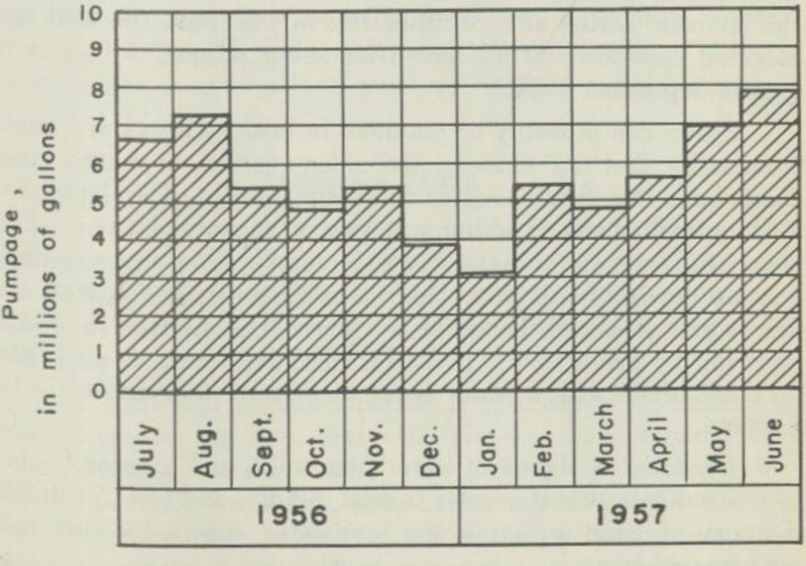


Figure 11B.—Total monthly pumpage, in million gallons, from municipal well O-150 at Brewton for the period July 1956 through June 1957.

Chemical analyses available for water obtained from the municipal supply wells at Brewton and East Brewton indicate that the water is of good quality. The water is moderately hard, low in chlorides, and alkaline.

FLOMATON

Wells supply most of the water used for municipal, industrial, and domestic purposes in Flomaton. Private and public supply wells tap terrace and alluvial deposits, the Citronelle Formation, and the undifferentiated Miocene deposits for their source of supply. Prior to 1928, Flomaton obtained its public supply from three flowing wells which were located at the site of well X-107 (pl. 1). These wells flowed into a 60,000-gallon reservoir. In 1928 an additional well (nonflowing) was drilled to a depth of 104 feet. Use of this well was later discontinued and a second well, X-107, was drilled. It taps coarse sand and gravel in the Miocene Series at depths of 118 to 148 feet. The reported yield of the well in 1945 was 100,000 gallons per day.

Customer taps on the Flomaton water system increased from 111 in 1944 to 300 in 1951. This increase in water use resulted in the drilling of municipal well X-106 in 1952. Well X-106 taps the Miocene Series at a depth of 102 to 143 feet. The well had a reported drawdown of 15 feet after being pumped 1 hour at 760 gpm in September 1952.

Flows can probably be obtained in lowland areas at Flomaton from wells that tap Miocene and older aquifers at depths greater than those that furnish water to existing wells. The depth of the flowing wells, one of which had a reported water level of 12 feet above the land surface, that formerly supplied the needs at Flomaton are not known. It is probable that the wells had a depth similar to that of a well drilled at the home of G. A. Ivey in 1905 and reported by Smith (1907, p. 72-73). The Ivey well was reportedly 311 feet deep with a water level of 8 to 10 feet above the land surface.

Chemical analyses of water from wells at Flomaton (tables 4 and 5) indicate that the water is soft, acidic, and low in chlorides. Owners of some wells in the area have reported objectionable amounts of iron.

POLLARD

In 1907, Smith (p. 271-272) reported that numerous flowing wells supplied the needs of Pollard. He furnished information for eleven wells that were 73 to 104 feet deep, flowed 1 to 25 gpm, and had water levels of 2 to 8 feet above the land surface. Most, if not all of the wells, are no longer in use. Many privately owned flowing wells that tap the Miocene Series are the major source of water used for all purposes in and near Pollard.

Municipal well W-109 supplies water to several families at Pollard. The well, reported to be 600 feet deep, taps the Glendon Limestone Member of the Byram Formation and the Marianna and Ocala Limestones. It had a measured water level of 64.5 feet above the land surface on February 10, 1955. A well tapping aquifers in the Miocene Series in conjunction with those in the underlying Glendon Limestone Member of the Byram Formation and the Marianna and Ocala Limestones in the Oligocene and Eocene Series would probably yield 500 gpm or more in the Pollard area.

Preliminary chemical analyses indicate that water from alluvial, terrace, and Miocene deposits in the Pollard area is soft to moderately hard and low in chlorides, but according to reports often contains objectionable amounts of iron. Water from aquifers below the Miocene is moderately hard. Partial analyses indicate that the water is generally of good quality and suitable for most uses.

AQUIFER TESTS

Four aquifer tests were made to determine the hydraulic characteristics of the major aquifers in Escambia County. The main characteristics are the coefficients of transmissibility and storage, which indicate the capacity of an aquifer to transmit water and to yield water from storage, respectively.

The coefficient of transmissibility represents the amount of water, in gallons per day, that will flow through a vertical strip of water-bearing material 1 mile wide under a hydraulic gradient of 1 foot per mile (or 1 foot wide under a gradient of 1 foot per foot). Therefore, the volume of water that will flow each day through each mile of water-bearing material is the product of the hydraulic gradient and the coefficient of transmissibility.

The coefficient of storage of an aquifer is the volume of water it releases from or takes into storage per unit surface area of the aquifer per unit change in the component of head normal to that surface. The coefficients of transmissibility and storage computed from aquifer tests made in Escambia County are given in table 2.

Table 2.–*Coefficients of transmissibility and storage computed from aquifer tests, Escambia County*

Well pumped	Well observed	Geologic unit(s) tapped	Part of hydrograph analyzed	Transmissibility (gallons per day per foot)	Coefficient of storage
H-68	H-68	Miocene	Recovery	74,800	...
O-150	O-141	Lisbon	Drawdown	27,750	7.85×10^{-6}
	O-147	Lisbon	Drawdown	23,000	1.04×10^{-5}
W-4	W-4	Miocene, Glendon, Marianna, Ocala	Recovery	12,850	...
Z-72	Z-71	Citronelle	Drawdown	77,600	2.86×10^{-6}
	Z-71	Citronelle	Recovery	79,500	3.46×10^{-6}

An aquifer test of wells tapping the basal sand of the Lisbon Formation at Brewton was made in April 1957. Fluctuations of water levels in the pumped well (O-150) and in the observation wells are shown in figure 12. Well O-150 had a drawdown in water level of 147.5 feet after pumping 787 gpm for 16.6 hours. The specific capacity was 5.3 gpm per foot of drawdown. The coefficients of transmissibilities determined for observation wells O-141 and O-147 were 27,750 and 23,000 gallons per day per foot and the coefficients of storage 7.85×10^{-6} and 1.04×10^{-5}, respectively.

Figure 13 shows in a general way the theoretical drawdowns that would be produced by pumping 500 gallons per minute from an ideal aquifer having coefficients of transmissibility and storage the same as the average of those computed for observation wells O-141 and O-147. The average coefficients for the Lisbon Formation at Brewton should be used only for that area, because of the variable thickness of the basal sand.

An aquifer test on well W-4 at the Container Corp. of America southwest of Brewton was made in July 1956. The well taps the Miocene Series, the Glendon Limestone Member of the Byram Formation, and the Marianna and Ocala Limestones. The well had a drawdown in water level of 105.5 feet after pumping 450 gpm for 24 hours. The specific capacity was 4.3 gpm per foot of

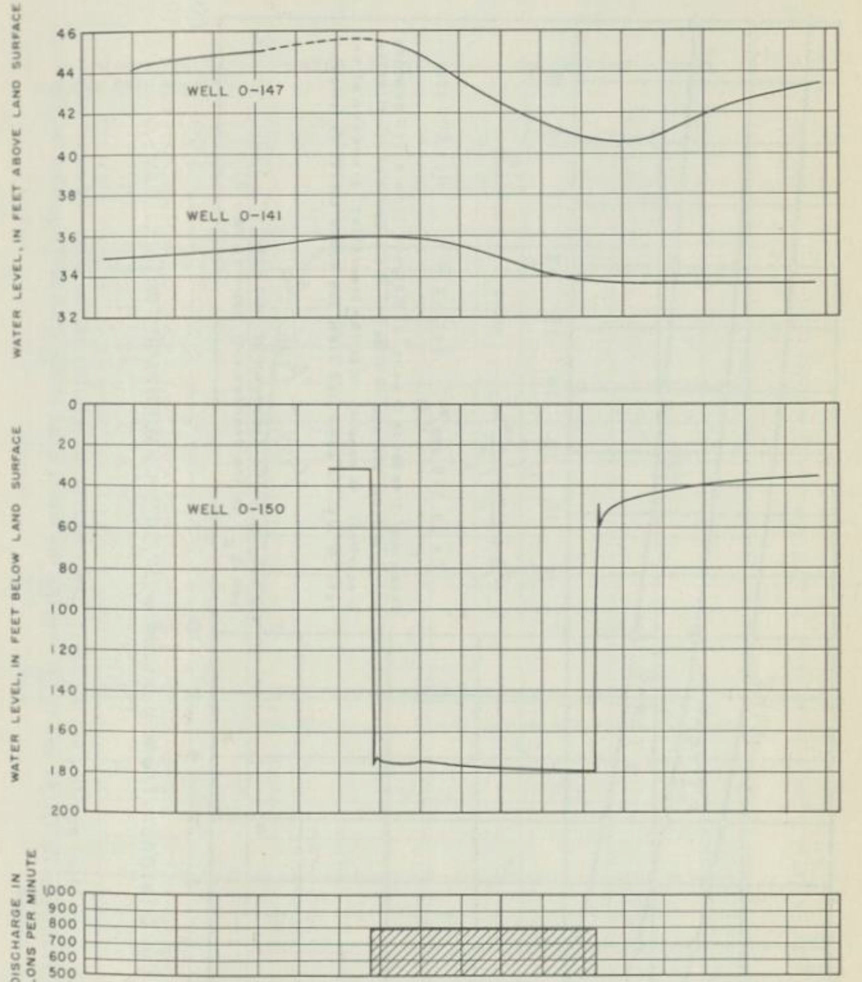
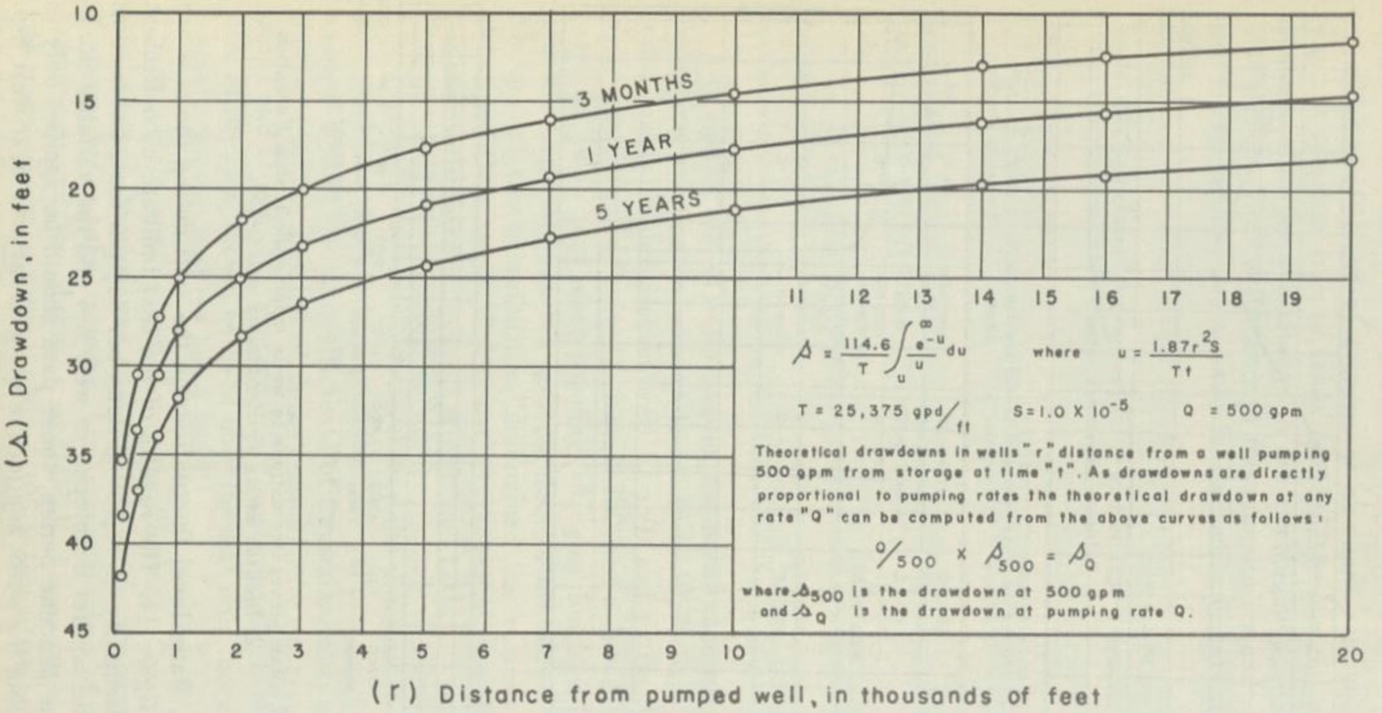


Figure 12.—Water-level fluctuations in wells tapping the Lisbon Formation at Brewton during aquifer test on well O-150.

drawdown. Water-level fluctuations in the well during the test are shown in figure 14. The results of the test indicate a coefficient of transmissibility of 12,850 gallons per day per foot. Because of the multiple aquifer developed in well W-4 and the variable thickness of the Miocene Series, these data should be applied only to wells tapping the same aquifers in the general area near well W-4.



$$\Delta = \frac{114.6}{T}\int_{u}^{\infty}\frac{e^{-u}}{u}\,du \qquad \text{where} \qquad u = \frac{1.87r^2S}{Tt}$$

$T = 25{,}375$ gpd/ft $\qquad S = 1.0 \times 10^{-5} \qquad Q = 500$ gpm

Theoretical drawdowns in wells "r" distance from a well pumping 500 gpm from storage at time "t". As drawdowns are directly proportional to pumping rates the theoretical drawdown at any rate "Q" can be computed from the above curves as follows:

$$Q/_{500} \times \Delta_{500} = \Delta_Q$$

where Δ_{500} is the drawdown at 500 gpm and Δ_Q is the drawdown at pumping rate Q.

Figure 13.–Theoretical drawdown in an ideal aquifer, having coefficients of transmissibility and storage the same as the average of those computed for observation wells O-141 and O-147 tapping the basal sand of the Lisbon Formation at Brewton.

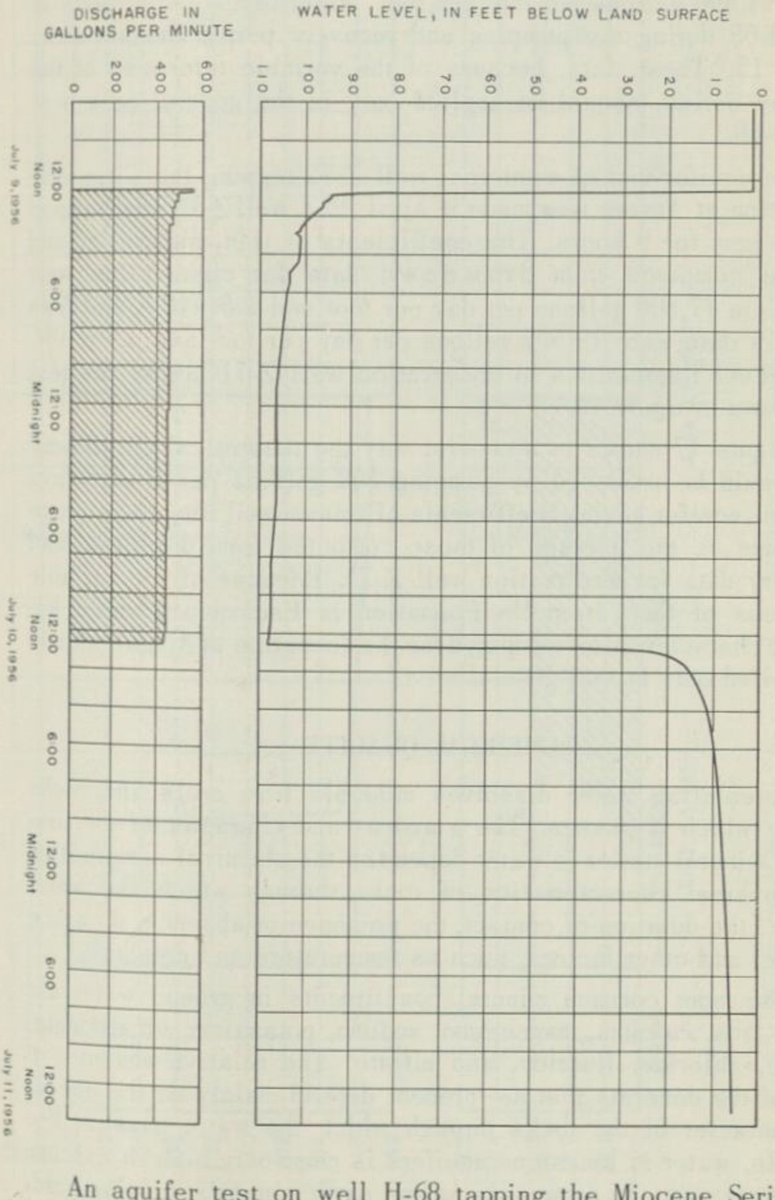


Figure 14.—Water-level fluctuations in well W-4 during aquifer test.

An aquifer test on well H-68 tapping the Miocene Series at the Hauss State Forest Nursery south of Huxford was made in June 1957. The well had a drawdown in water level of 19.4 feet after pumping 323 gpm for 24 hours. The specific capacity was

16.6 gpm per foot of drawdown and the coefficient of transmissibility 74,800 gallons per day per foot. Water-level fluctuations in well H-68 during the pumping and recovery period are shown in figure 15. These data, because of the variable thickness of the Miocene Series, should be applied only in the general area near well H-68.

An aquifer test of municipal well Z-72 tapping the Citronelle Formation at Atmore was made in April 1957. Well Z-72 was pumped at 333 gpm for 9 hours. The coefficients of transmissibility and storage computed from drawdown data for observation well Z-71 were 77,600 gallons per day per foot and $2.86\text{x}10^{-6}$, and from recovery data were 79,500 gallons per day per foot and $3.46\text{x}10^{-4}$. Water-level fluctuations in observation well Z-71 during the test are shown in figure 16.

Figure 17 shows in a general way the theoretical drawdowns that would be produced by pumping 500 gallons per minute from an ideal aquifer having coefficients of transmissibility and storage the same as the average of those computed from drawdown and recovery data for observation well Z-71. Because of the variable thickness of the Citronelle Formation in Escambia County, hydraulic characteristics computed for the formation at Atmore should be applied only in that general area.

CHEMICAL QUALITY

Percolating water dissolves minerals from soils and rocks through which it passes. The amount and character of the dissolved mineral matter in water depend on the chemical composition and physical characteristics of rocks through which the water passes, the duration of contact, the presence or absence of carbon dioxide, and other factors, such as temperature and pressure.

The more common mineral constituents in ground water are silica, iron, calcium, magnesium, sodium, potassium, bicarbonate, sulfate, chloride, fluoride, and nitrate. The relative amounts of each of the minerals that are present depend mainly on the chemical character of the rocks through which the water passes. For example, water in limestone aquifers is commonly high in calcium and magnesium, the principal alkaline earth minerals causing hardness in natural waters. Where water has migrated considerable distances through rocks of varying character, quality-of-water data are difficult to interpret. For a more complete discussion of the

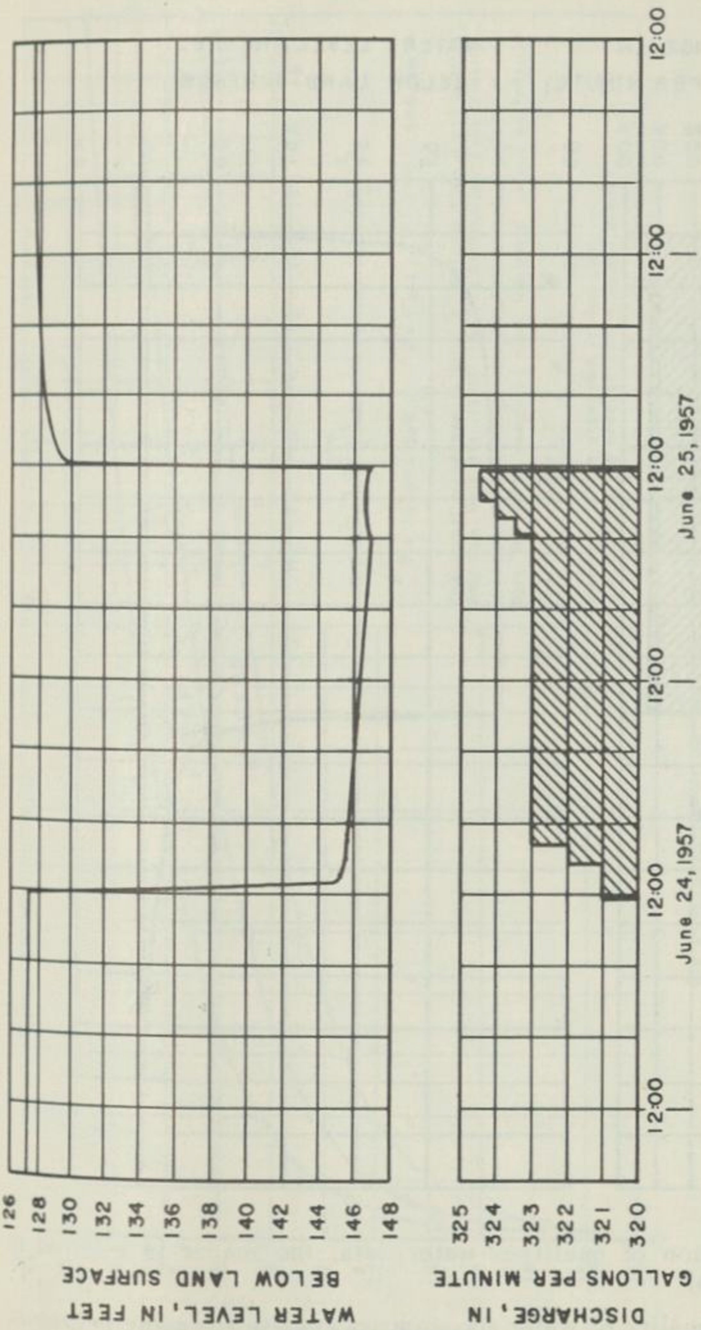


Figure 15.—Water-level fluctuations in well H-68 during aquifer test.

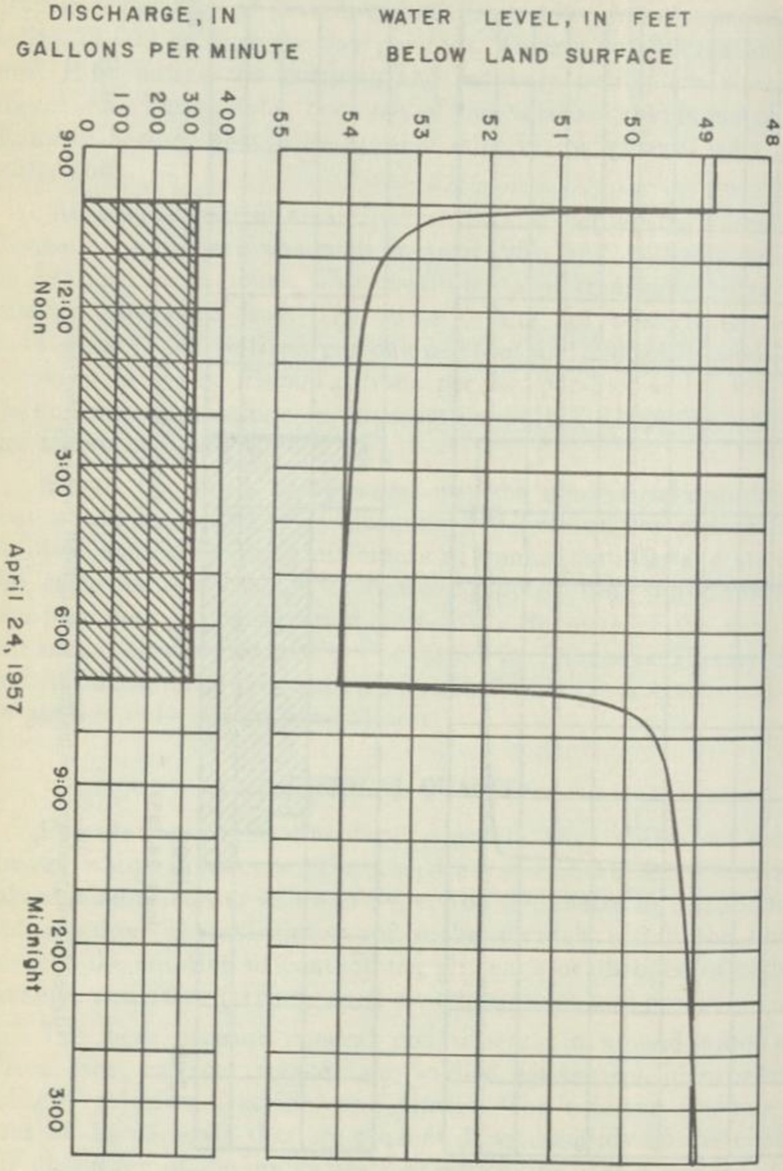
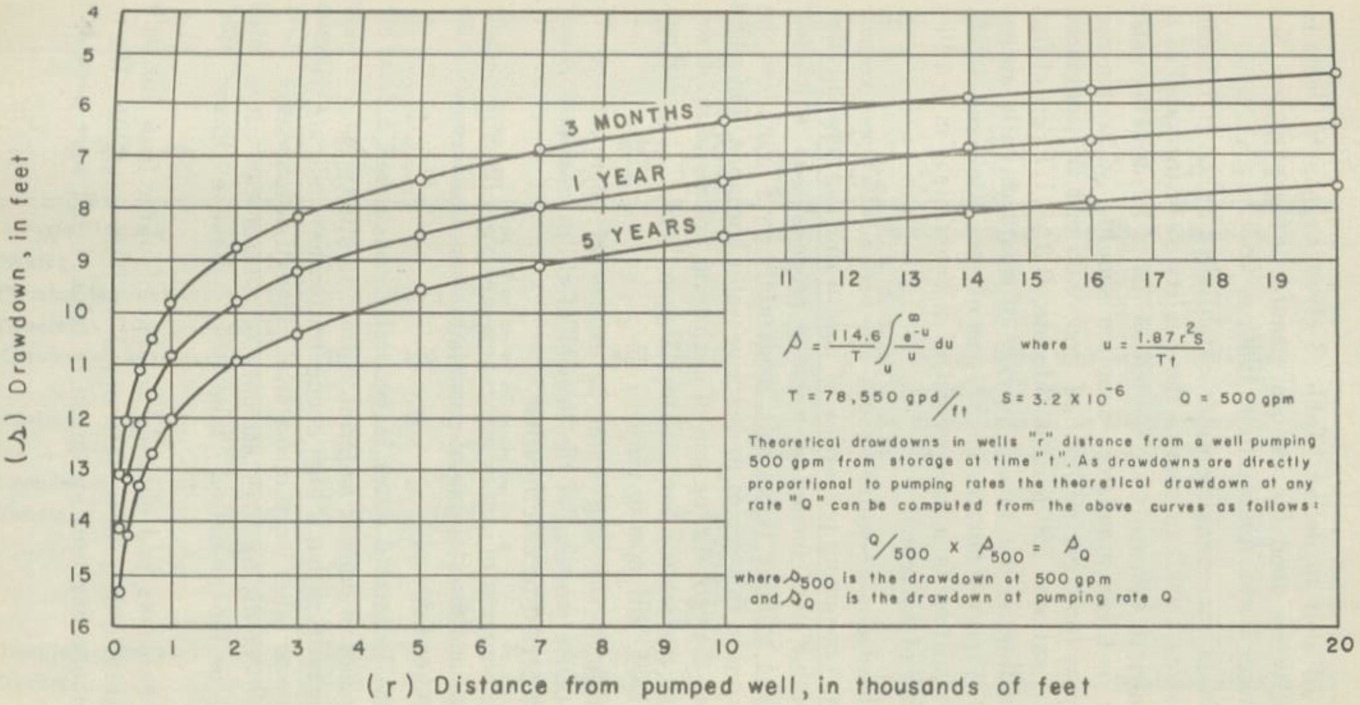


Figure 16.—Water-level fluctuations in well Z-71 at Atmore during aquifer test.

interpretation of quality-of-water data, the reader is referred to Hem (1959).

The quality of water may restrict its use for many purposes. Exact limits of dissolved minerals that can be tolerated for specific



$$\Delta = \frac{114.6}{T}\int_u^\infty \frac{e^{-u}}{u}\,du \qquad \text{where} \qquad u = \frac{1.87\,r^2S}{Tt}$$

$T = 78{,}550$ gpd/ft $S = 3.2 \times 10^{-6}$ $Q = 500$ gpm

Theoretical drawdowns in wells "r" distance from a well pumping 500 gpm from storage at time "t". As drawdowns are directly proportional to pumping rates the theoretical drawdown at any rate "Q" can be computed from the above curves as follows:

$$Q/500 \times \Delta_{500} = \Delta_Q$$

where Δ_{500} is the drawdown at 500 gpm
and Δ_Q is the drawdown at pumping rate Q

Figure 17.—Theoretical drawdown in an ideal aquifer, having coefficients of transmissibility and storage the same as the average of those computed from drawdown and recovery data for observation well Z-71.

uses are difficult to define. Table 3 gives suggested limits for water quality as used for various manufacturing purposes (New England Water Works Association, 1940, p. 263).

Standards for drinking water established by the U.S. Public Health Service (1962) to control the quality of water supplied by common carriers commonly are quoted as limits for drinking water. According to these standards, supplies should not contain more than 0.3 ppm (part per million) of iron, 0.05 ppm of manganese, 250 ppm of sulfate, 250 ppm of chloride, 0.8 to 1.7 ppm of fluoride (depending on the annual average of maximum daily air temperatures), 45 ppm of nitrate, and 500 ppm of total dissolved solids. A part per million is a unit weight of a constituent in a million unit weights of solvent.

The hardness of water should not exceed 150 ppm because of the soap-consuming properties of hard water and the objectionable insoluble curd formed in washing processes in which soap is used. The relative terms soft, moderately hard, hard, and very hard are used in this report to describe water hardness. The ranges in hardness that govern the use of each term are as follows: soft, 0 to 60 ppm; moderately hard, 61 to 120 ppm; hard, 121 to 180 ppm; and very hard, 181 ppm or more.

Fluoride in drinking water in excess of approximately 1.5 ppm may cause mottling of the enamel of children's teeth if used during the period of calcification.

Large amounts of iron or manganese are objectionable because of the taste and the staining of porcelain or enamel fixtures, clothing, and other fabrics.

Nitrate in ground water is generally considered a final oxidation product of organic material. Nitrate is often present in water in small quantities, but a high concentration may indicate pollution by sewage or other organic material. Investigations have shown that water containing high amounts of nitrate can cause infant cyanosis, or the so-called "blue baby" disease (Maxcy, 1950, p. 265).

The hardness and chloride content of water from 969 wells in Escambia County were determined by field analysis. The results of these analyses are given in table 4 and were used as a

Table 3.—*Suggested water-quality tolerances for selected industrial uses* [1]

Industry or use	Turbidity	Color	Hardness as $CaCO_3$	Iron as Fe	Manganese as Mn	Allowable limits in ppm.			Hydrogen sulfide	Other requirements[3]
						Total solids	Alkalinity as $CaCO_3$	Odor, taste		
Air conditioning.......				[2]0.5	0.5			Low	1	No corrosiveness, no slime formation.
Baking..............	10	10		[2] .2	.2			Low	.2	P [3]
Canning legumes	10		25-75	[2] .2	.2			Low	1	P
General..............	10			[2] .2	.2			Low	1	P
Carbonated beverages..	2	10	250	.2 [2](.3)	.2	850	50-100	Low	.2	P. Organic color plus oxygen consumed less than 10 ppm.
Cooling..............	50		50	[2] .5	.5				5	No corrosiveness, no slime formation.
Ice..................	5	5		[2] .2	.2			Low		P. SiO_2 less than 10 ppm.
Laundering...........			50	.2	.2					
Tanning.............	20	10-100	50-135	[2] .2	.2		Total 135, Hydroxide, 8			
Textiles, general......	5	20		.25	.25					
Dyeing..............	5	5-20		[2] .25	.25	200				Constant composition. Residual alumina less than 0.5 ppm.
Wool scouring.........		70		[2] 1.0	1.0					
Cotton bandage........	5	5		[2] .2	.2			Low		

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[1] From New England Water Works Assoc. Jour., v. 54, p. 271, 1940.

[2] Limit given applies both to iron alone and to the sum of iron and manganese.

[3] P indicates that potable water, conforming to U.S. Public Health Service standards, is necessary.

guide in determining the wells to be resampled for more comprehensive analysis. The results of 55 partial chemical analyses of water samples collected from wells in Escambia County are given in table 5.

HATCHETIGBEE FORMATION

Wells in Escambia County do not tap the Hatchetigbee Formation because of its depth and the availability of water in overlying aquifers. It is probable that permeable sands in the formation may be a potential source of moderate to large quantities of water. Electric logs of oil test wells penetrating the Hatchetigbee in central and eastern parts of the county indicate that water in its aquifers is low in chloride content.

LISBON FORMATION

Water of good quality is available from the Lisbon Formation in most parts of Escambia County. Wells tap the formation in conjunction with aquifers in overlying formations as far west as Pollard. Based on eight field and partial chemical analyses of samples collected from seven wells tapping the formation in the Brewton and East Brewton areas, the water is low in chloride content and dissolved solids, and is moderately hard. The chloride content ranged from 0 to 11 ppm and the hardness from 92 to 120 ppm.

GOSPORT SAND

The Gosport Sand furnishes water to numerous wells in central and eastern Escambia County. It is not usually developed separately as an aquifer but does yield water to wells that tap it in conjunction with the underlying Lisbon Formation and the overlying formations of younger age. Well W-32 north of Pollard is believed to tap only the Gosport. Based on a field chemical analysis of a sample collected from the well, the water has a chloride content of 2 ppm and a hardness of 108 ppm. The water is believed to be very similar in quality to that in the underlying Lisbon Formation.

MOODYS BRANCH FORMATION

Glauconitic sand in the Moodys Branch Formation yields water to wells in the eastern half of Escambia County. Wells seldom tap the Moodys Branch as the principal source of supply, however, numerous wells do tap the formation in conjunction with aquifers in other formations. Water obtained from wells tapping the Moodys Branch in conjunction with other aquifers generally has a low chloride content but is moderately hard or hard. Water from these wells in the northeasternmost part of the county generally has a chloride content less than 10 ppm and a hardness of 120 to 150 ppm.

YAZOO CLAY

Sand in the upper part of the Yazoo Clay and limestone in the lower part supply adequate quantities of potable water for domestic use to wells in the northeasternmost part of Escambia County. The water, based on six field and partial chemical analyses of samples collected from five wells known to tap the formation, is generally of good quality but is hard. The chloride content ranged from 2 to 18 ppm and the hardness from 144 to 176 ppm. Numerous wells tap the Yazoo in conjunction with other aquifers, however, in most of the wells the quality of water obtained is similar to that obtained from wells tapping only the Yazoo.

OCALA LIMESTONE

The Ocala Limestone of the Eocene Series is the basal formation of a sequence of calcareous rocks that includes the overlying Red Bluff Clay, the Marianna Limestone, and the Glendon Limestone Member of the Byram Formation, all of Oligocene age. Wells in Escambia County do not tap the Ocala as their sole source of supply but do tap it in conjunction with the sequence of overlying calcareous rocks. Each of the limestones probably contributes a part of the water obtained from wells tapping them. The Red Bluff Clay, because of its relatively impermeable nature, probably does not yield water to wells.

Water obtained from the Ocala, Marianna, and Glendon, based on 42 field and 8 partial chemical analyses collected from 43 wells in central and eastern Escambia County, is of good quality but is moderately hard to hard, and locally may contain large amounts of iron. Chloride contents ranged from 0 to 11 ppm and averaged about 4.5 ppm and hardnesses ranged from 78 to 171 ppm and averaged about 127 ppm. Wells tapping the Ocala in conjunction with aquifers other than the Marianna and Glendon obtain water that is similar in quality to that obtained from the limestone sequence.

MARIANNA LIMESTONE

The Marianna Limestone supplies water to numerous wells in central and eastern Escambia County. Wells seldom tap the Marianna as their sole source of supply but do tap it in conjunction with other aquifers, generally the underlying Ocala Limestone of the Eocene Series and the overlying Glendon Limestone Member of the Byram Formation.

A field analysis of water collected from well A-20 near Teddy, believed to tap only the Marianna, indicated a chloride content of 2 ppm and a hardness of 89 ppm. The quality of water obtained from wells tapping the Marianna in conjunction with the Ocala and Glendon is discussed in the preceding section with that obtained from the Ocala Limestone.

BYRAM FORMATION

The Glendon Limestone Member and the Bucatunna Clay Member of the Byram Formation supply water to wells in central and eastern Escambia County. Wells generally tap them in conjunction with other aquifers but a few do tap them for their entire supply.

The Glendon is most often tapped in conjunction with the underlying Marianna and Ocala Limestones. Field analyses of water collected from well D-16 west of Appleton and well V-1 near East Brewton tapping only the Glendon, indicate chloride contents of 4 ppm and hardnesses of 149 and 128 ppm, respectively. Water from 4 wells believed to tap only the Glendon at Wallace had chloride contents of 1 or 2 ppm and hardnesses ranging from 80 to 116 ppm. The quality of water obtained from wells tapping the Glendon in conjunction with the underlying Marianna and Ocala Limestones also is low in chloride content but generally is harder. Its quality is discussed with that obtained from the Ocala Limestone.

Few wells tap the Bucatunna Clay Member of the Byram Formation for their source of supply. Wells O-126 and O-127 at Brewton, developed in the Bucatunna, obtain water that has a hardness of 124 and 126 ppm, respectively.

CHICKASAWHAY LIMESTONE

The Chickasawhay Limestone, where present, supplies water to wells in eastern and central Escambia County. Water from nine wells tapping the formation in this area, based on field chemical analyses, is low in chloride content but is moderately hard to hard. The chloride contents ranged from 0 to 11 ppm and the hardness from 100 to 176 ppm. Water obtained from well O-17 north of Brewton is moderately hard but is of good quality otherwise. Water collected from this well, based on a partial chemical analysis, had a hardness of 114 ppm and contained only small amounts of chloride, iron, fluoride, and nitrate. Other mineral constituents determined were not present in objectionable quantities.

MIOCENE SERIES

Beds of sand and gravel in the undifferentiated Miocene Series, in all but the northeastern part of the county where it is absent, supply small to large quantities of water of good quality to many wells for all purposes. Water obtained from the Miocene, based on 356 field chemical analyses, is low in chloride content and soft to hard. The chloride contents ranged from 0 to 145 ppm but were generally less than 10 ppm. The hardness ranged from 2 to 125 ppm and was generally less than 25 ppm except in the Bradley, Brewton, Pollard, Foshee, and Wallace areas.

The distribution of hardness of water in the Miocene deposits is shown in figure 18. The anomalous hardnesses at Bradley, Brewton, Pollard, Foshee, and Wallace correspond with areas of large withdrawal by flowing wells or pumpage. Hard water from calcareous beds in the underlying Oligocene Series is probably replacing, in part, the large quantities of water withdrawn from the Miocene. This also is indicated by the negligible decline in water levels and flows from wells tapping the Miocene at Pollard. The water levels and flows are essentially the same as those recorded in 1905 (Smith, 1907, p. 271-272). Recharge from the Oligocene Series, tapped by a few wells in the area, has probably prevented the significant declines in water levels and flows that are so noticeable in other areas of artesian flow in Alabama.

Partial chemical analyses of samples collected from 20 wells in Escambia County indicate that water from Miocene aquifers is low in total solids and that of the chemical constituents determined, none were present in objectionable quantities. Some owners of wells tapping the Miocene have reported objectionable staining indicating excessive iron content.

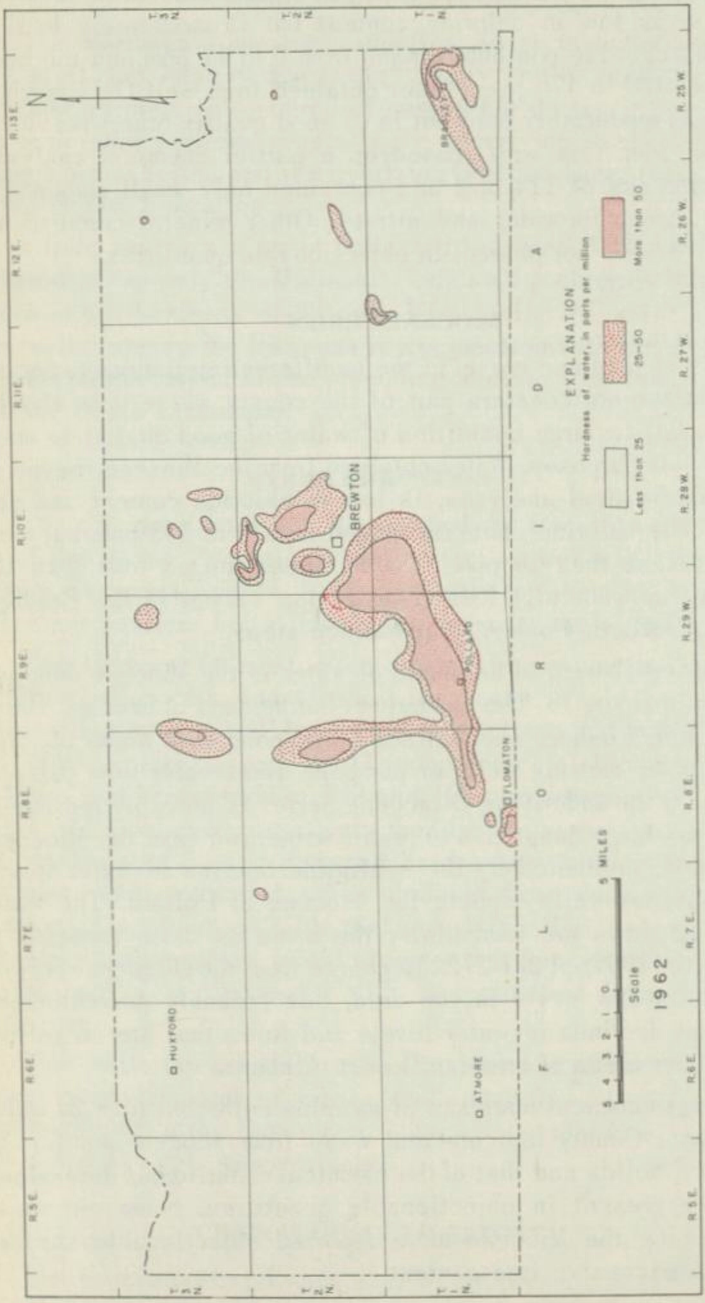
N
T. 3 N.
T. 2 N.
T. 1 N.
R. 5 E.
R. 6 E.
R. 7 E.
R. 8 E.
R. 9 E.
R. 10 E.
R. 11 E.
R. 12 E.
R. 13 E.
R. 25 W.
R. 26 W.
R. 27 W.
R. 28 W.
R. 29 W.
HUXFORD
ATMORE
BREWTON
POLLARD
FLOMATON
BRADLEY
F L O R I D A
EXPLANATION
Hardness of water, in parts per million
Less than 25
25–50
More than 50
5 4 3 2 1 0 5 MILES
Scale
1962

Figure 18.—Map showing distribution of hardness of water in wells tapping the Miocene Series, Escambia County.

CITRONELLE FORMATION

The Citronelle Formation supplies water of good quality to many wells in southeastern, central, and western Escambia County. Field chemical analyses of samples collected from 379 wells tapping the formation indicate that the water is low in chloride content and soft to moderately hard. The chloride content ranged from 0 to 83 ppm and was generally less than 15 ppm, and the hardness ranged from 3 to 84 ppm and was generally less than 20 ppm. Partial chemical analyses for nine samples confirms the low chloride content and hardness and indicates that the water contains only a small amount of dissolved solids but locally is high in iron content. Iron contents were low in all samples except those from wells Z-71 and Z-72 at Atmore; they contained 0.3 ppm which is objectionable for some purposes unless treated.

TERRACE AND ALLUVIAL DEPOSITS

Water of good quality is obtained from wells tapping terrace and alluvial deposits in Escambia County. Field chemical analyses for 80 wells, 77 tapping terrace deposits and 3 tapping alluvial deposits, indicate that the water is low in chloride content and soft to moderately hard. The chloride content ranged from 0 to 67 ppm and was generally less than 15 ppm and the hardness ranged from 5 to 71 ppm and was generally less than 20 ppm.

Based on a partial chemical analysis of water from well V-2 tapping terrace deposits east of Brewton, the chloride content was 3.8 ppm and the hardness was 4 ppm. The analysis indicated the water contained only a small amount of dissolved solids. Based on reports from well owners, iron concentrations locally are sufficient to be objectionable because of staining.

CONCLUSIONS

Additional ground water of good quality can be obtained in Escambia County. The Hatchetigbee Formation, undeveloped at present, may be a potential source of moderate to large quantities of good quality ground water in eastern and central parts of the county.

Moderate to large quantities of water can be obtained from the Lisbon Formation in most parts of the county. Wells tapping the Lisbon at Brewton yield as much as 787 gpm and similar yields probably can be obtained from the formation in east-central parts of the county where the basal sand is as much as 60 feet thick.

Small to moderate quantities of water can be obtained from the Gosport Sand where it is of sufficient thickness and from the Moodys Branch Formation and the Yazoo Clay in eastern parts of the county where they contain beds of sand or limestone.

The Ocala and Marianna Limestones and the Glendon Limestone Member of the Byram Formation will probably yield small to moderate quantities of water to wells tapping them in eastern and central parts of the county. Multiple aquifer wells tapping the Ocala, Marianna, and Glendon in the same area generally yield moderate to large quantities of water. Wells tapping the combined aquifers in lowland areas flow as much as 85 gpm.

The Bucatunna Clay Member of the Byram Formation yields small quantities of water to wells in the Brewton area where it contains beds of sand. The member is relatively impermeable and is not a source of supply in most other areas.

The Chickasawhay Limestone, where present, will yield small to moderate quantities of water to wells in some areas. A few wells in the Brewton and Wallace areas tap sands and solution cavities in the Chickasawhay for their source of supply.

The undifferentiated Miocene Series, where present in eastern Escambia County, supplies small to moderate quantities of water to many wells. Permeable beds of sand in the Miocene yield moderate to large quantities of water to wells in south-central and southwestern parts of the county. Wells tapping the Miocene yield as much as 760 gpm and it is probable that yields of 300 gpm or more can be obtained throughout the above area.

The Citronelle Formation is the principal aquifer in western Escambia County. Wells tapping sand and gravel in the formation at Atmore yield as much as 333 gpm. Similar yields can probably be obtained from the formation in the southwestern part of the county where the thickness of the Citronelle is 100 feet or more.

Small to moderate quantities of water are available in sands and gravels in Pleistocene terrace deposits and Recent alluvium in and adjacent to the major streams and their tributaries in the county.

Water from all aquifers in Escambia County, except those in the Miocene Series, Citronelle Formation, and the terrace and alluvial deposits generally is moderately hard to hard but is otherwise of satisfactory quality for most uses. Water from sand aquifers in the Miocene Series, the Citronelle Formation, and the terrace and alluvial deposits is generally of good quality being soft and low in mineral content. Locally, water from the aquifers contains enough iron to be objectionable because of staining. Moderately hard water is obtained from the Miocene in the Bradley, Brewton, Foshee, Pollard, and Wallace areas. Hard water from calcareous beds in the underlying Oligocene Series is probably replacing, in part, large quantities of water withdrawn from the Miocene in those areas.

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BASIC DATA

Table 4.—*Records of wells in Escambia County, Ala.*

Well: Numbers correspond to those shown in plate 1 and tables 2, 5, 6, and 7; asterisk indicates chemical analysis given in table 5.
Type of well: B, bored; D, drilled; Dr, driven; Du, dug; J, jetted.
Depth of well and water level: Depths and water levels shown in feet are reported; those in feet and tenths are measured.
Method of lift: C, centrifugal; Cy, cylinder; F, flow; J, jet; M, manual; P, pitcher or piston; T, turbine.
Use of water: D, domestic; Ind, industrial; Irr, irrigation; N, none; P, public supply; S, stock.

Altitude: Altitudes determined by aneroid barometer.
Water-bearing unit: Tl, Lisbon Formation; Tgo, Gosport Sand; Tmb, Moodys Branch Formation; Ty, Yazoo Clay; To, Ocala Limestone; Tm, Marianna Limestone; Tg, Glendon Limestone Member of Byram Formation; Tb, Bucatunna Clay Member of Byram Formation; Tc, Chickasawhay Limestone; Tmu, Miocene Series undifferentiated; Tci, Citronelle Formation; Qt, Terrace deposits; Qal, Alluvium.

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as CaCO$_3$ (ppm)	
A- 1	Hugh Raburn	Jim Logan.	D	125.8	2	Tgo	161	+ 4.2	6-15-57	F	N	. .	. .	. . .	Casing: 2-in. to 65 ft.; none below. Electric log in files of U.S. Geol. Survey.
*A- 2	P. C. Thames	W. A. Blair.	D	139.0	3	Ty	160	1.8	3- 3-55	P	D	. .	2	148	Casing: 3-in. to 64 ft.; none below. Formerly flowed.
A- 3	Jessie Evans	. . . .	. .	115.3	2	Ty	159	.7	3- 3-55	P	D	65	2	150	Formerly flowed.
A- 4	George Stamps	Marcus Blair	D	230.0	4	Ty Tmb Tgo Tl	147	+ 4.8	4-17-57	F	S	68	7	134	Casing: 4-in. to 70 ft.; none below. Measured flow 20 gpm on 4-8-57. Electric log in files of U.S. Geol. Survey.
A- 5	Buster Culliver	. . . . . do	D	142	4	Ty (?)	207	62	1948	J	D,S	. .	7	67	Casing and screen: 4-in. to 142 ft.
A- 6	Melvin Richardson . .	. . . .	Du	22.7	42	Qt	159	14.9	3- 4-55	M	N	. .	. .	. . .	
A- 7	J. M. Ralls	W. A. Blair.	D	161.0	4	Ty Tmb	137	. . . .	. . . . . .	F	N	68	7	143	Casing: 4-in. to 54 ft.; none below. Electric log in files of U.S. Geol. Survey.
A- 8	. . . . do	. . . .	D	199.6	4	Ty Tmb	136	+ 6.0	3- 3-55	F	D	68	2	136	Casing: 4-in. to 46 ft.; none below. Electric log in files of U.S. Geol. Survey. Drilled as oil test well.
A- 9	Melvin Richardson . .	W. A. Blair.	D	. . . .	4	Ty	145	. . . .	. . . . . .	P	D	68	11	144	Casing: 4-in. to 74 ft.
A-10	H. Brewer.	. . . .	Du	21.6	36	Qt	160	15.0	3- 4-55	M	D	. .	2	9	
A-11	V. D. McCreary. . . .	W. A. Blair.	D	165	4	Ty	158	14	6- 1-56	J	D	. .	18	176	Casing: 4-in. to 60 ft.; none below.

A-12	H. W. Hoomes	Fred McCreary	D	175	3	Ty	158	25	1955	J	D	..	4	150	Casing: 3-in. to 150 ft.; none below. Jet set at 40 ft. Formerly flowed.
A-13	V. D. McCreary	....	D	180.0	3	Ty	156	15.7	5-15-57	P	D	..	..	...	Observation well. Casing: 3-in. to 135 ft.; none below. Electric log in files of U.S. Geol. Survey. Formerly flowed.
A-14	....do	....	Du	19.6	48	Qt	145	13.8	3- 4-55	M	D	..	7	18	
A-15	....do	Fred McCreary	D	154.0	4	Ty Tmb	120	+16.0	......	F	S	67	1	146	Casing: 4-in. to 85 ft.; none below. Measured flow 25 gpm on 3-1-57. Electric log in files of U.S. Geol. Survey.
A-16	....do	....do	D	170.4	4	Tm To Ty Tmb	123	+ 7.4	4-20-55	F	S	67	1	137	Casing: 4-in. to 22 ft., none below. Measured flow 2.0 gpm on 4-20-55. Electric log in files of U.S. Geol. Survey.
A-17	....do	....do	D	173.5	4	Tm To Ty Tmb	...	....	......	F	S	67	2	139	Measured flow 10 gpm on 3-9-55.
A-18	....do	....do	D	174.0	3	Tm To Ty Tmb	...	+22.5	3- 9-55	F	S	67	2	138	Measured flow 8.0 gpm on 3-9-55.
A-19	Fred Clements	....do	D	250	4	Tm To (?)	189	60	1940	P	D	..	2	157	Casing: 4-in. to 60 ft.; none below.
A-20	Martha Hart	....do	D	125	3	Tm (?)	186	....	......	Cy	N	66	2	89	
A-21	....do	....do	D	230	4	Tm To (?)	184	50	......	P	D,S	69	1	151	
A-22	....do	R. S. Hart	Dr	19.7	1¼	Qt	184	17.3	3- 8-55	P	N	..	..	...	
A-23	V. D. McCreary	Jim Logan	D	300	4	Tm To Ty (?)	183	30	1954	P	D,S	..	2	151	
A-24	S. J. Blow	....	Dr	19.1	1¼	Qt	184	9.7	2- 8-55	..	N	..	..	...	Casing and screen: 1¼-in. to 19.1 ft.
A-25	T. R. Miller Co.	....	Dr	17.1	1¼	Qt	172	15.8	3- 8-55	P	D	63	2	7	Casing and screen: 1¼-in. to 17.1 ft.
A-26	....do	....	..	17.0	1¼	Qt	168	14.7	3- 8-55	..	N	..	..	...	
B- 1	George Bowman	J. W. Bowman	D	65	2	Tb (?)	182	33	1955	J	D,S	70	7	21	
B- 2	Iris Hendrix	Fred McCreary	D	185	3	Tg Tm To	179	22	1943	J	D	..	11	145	
B- 3	Clay Gibson	L. K. Stone	D	78	2	Tmu	162	53	1955	Cy	D	69	11	25	Casing: 2-in. to 73 ft.; 2-in. screen from 73 to 78 ft.

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level: Above (+) or below land surface (feet)	Water level: Date of measurement	Method of lift	Use of water	Field determinations: Temperature (° F)	Field determinations: Chloride (Cl) (ppm)	Field determinations: Hardness as CaCO$_3$ (ppm)	Remarks
B- 4	Emma Harvey	Fred McCreary ...	D	250	4 2	Tg Tm To	180	100	......	Cy	D,S	69	7	98	
B- 5	E. J. Anders......	E. J. Andrews....	D	102	2	Tmu	161	21	1952	J	D,S	68	4	14	Casing: 2-in. to 92 ft.; 2-in. screen from 92 to 102 ft.
B- 6	Dennis Roberson....	Isaac Nearer	D	94	2	Tmu	152	80	1950	Cy	D	69	11	10	Casing: 2-in. to 89 ft.; 2-in. screen from 89 to 94 ft.
B- 7	Hubert Hartley.....	Hubert Hartley....	..	32.5	1½	Tmu	137	27.4	6- 9-56	P	D	..	..	...	
B- 8	Bessie Lambert	L. K. Stone......	D	66	2	Tmu	142	33	1954	Cy	D	68	..	...	
B- 9	Lillie Stone	G. C. Cook	..	215	1½	Tmu	129	17.6	6- 8-56	P	D	65	7	3	
B-10	A. J. Hoomes	....	D	33	2	Tmu	271	....	......	Cy	D	..	14	24	
B-11	W. B. Hoomes.....	W. A. Blair......	D	160	4	Tg Tm To	239	90	......	P	D	..	2	115	
B-12	Homer Lambert	....	..	150	4	Tg Tm To	229	90	......	Cy	N	69	..	118	
B-13	L. K. Stone.......	Coley Cook	D	73	2	Tmu	166	59	1953	J	D,S	69	7	6	Casing: 2-in. to 68 ft.; 2-in. screen from 68 to 73 ft.
B-14	Shirley Evans......	Isaac Nearer	D	74	2	Tmu	171	62	1951	Cy	D	68	..	...	Casing: 2-in. to 69 ft.; 2-in. screen from 69 to 74 ft.
B-15	M. J. Cook	....do........	D	87	2	Tmu	167	75	1950	Cy	D	..	..	...	
B-16	W. W. Blackman ...	O. W. Findley	D	73	2	Tmu	158	52	1954	J	D	..	7	12	Casing and screen: 2-in. to 73 ft.
B-17	M. J. Cook	Isaac Nearer	D	94	2	Tmu	162	80	1951	Cy	S	68	7	5	
B-18	Ely Edmond.......	....do........	D	94	2	Tmu	189	81	1954	Cy	D,S	68	7	6	Casing: 2-in. to 89 ft.; 2-in. screen from 89 to 94 ft.
B-19	A. J. Stone	....do........	D	85	2	Tmu	...	75	1951	Cy	D,S	..	7	4	Casing: 2-in. to 79 ft.; 2-in. screen from 79 to 84 ft.

B-20	C. L. Dubose......	.....do.........	D	54	2	Tmu	262	....	......	J	D,S	..	7	9	
*B-21	Sam White.........	.....do.........	D	106	2	Tmu	259	56	1953	J	D	..	..	...	Casing: 2-in. to 101 ft.; 2-in. screen from 101 to 106 ft.
B-22	I. G. Cook.........	Marcus Blair.....	D	235	4 2	Tg Tm To	217	55	1950	J	S	72	11	146	Casing: 4-in. to 50 ft. Formerly used for industrial purposes.
B-23	.....do..........	....	D	180	3	Tg Tm	215	75	1950	Cy	D	..	7	112	
B-24	.....do..........	Marcus Blair.....	D	200	3	Tg Tm To	217	66	1950	J	D,S	..	7	107	Casing: 3-in. to 154 ft.; none below.
B-25	.....do..........	Jim Halford......	B	17.8	1¼	Tmu	193	9.6	6- 6-56	P	D	68	11	8	
B-26	William L. Green...	Isaac Nearer.....	D	26	2	Tmu	215	19	1950	J	D,S	..	..	...	Casing: 2-in. to 22 ft.; 2-in. screen from 22 to 26 ft.
B-27	I. G. Cook.........	....	..	15.2	1¼	Tmu	210	11.8	6- 7-56	P	D,S	67	..	...	
B-28	Walker Hoomes	Isaac Nearer.....	D	50	2	Tmu	239	40	1942	Cy	D,S	..	7	9	
B-29	C. A. Lanier......	C. A. Lanier.....	B	20	1	Tmu	210	....	......	P	D,S	..	..	...	
B-30	.....do..........	.....do.........	B	23.7	1¼	Tmu	195	14.9	6- 6-56	..	..	..	..	...	Observation well.
B-31	William Cook......	Coley Cook	D	76	..	Tmu	138	41	1955	J	D,S	..	7	11	
B-32	L. W. Hoomes.....	L. W. Hoomes....	Dr	21.0	1¼	Tmu	171	12.2	3-10-55	P	D	66	2	6	Casing: 1¼-in. to 19 ft.; 1¼-in. screen from 19 to 21 ft.
B-33	W. B. Stone.......	W. B. Stone......	Dr	22.0	1¼	Tmu	171	16.4	3-10-55	P	S	66	16	14	Casing: 1¼-in. to 19 ft.; 1¼-in. screen from 19 to 22 ft.
B-34	Horace Hobbs......	....	B	35	2	Tmu	158	....	......	..	D,S	..	6	7	
D- 1	J. W. Skinner	E. Kearley	D	150	4	Tg Tm	231	100	1945	Cy	D	68	3	156	
D- 2	S. L. Geck	Marcus Blair.....	D	200	4	Tg Tm To	191	42	1954	Cy	D	66	0	134	Casing: 4-in. to 97 ft.; none below.
D- 3	Herman Crosby	E. Kearley	D	150	4	Tg Tm	223	100	1946	Cy	D	..	0	140	Casing: 4-in. to 120 ft.; none below.
*D- 4	J. L. McCord	Marcus Blair.....	D	250	3	Tg Tm To	269	75	1953	Cy	D	69	..	...	Casing: 3-in. to 186 ft.; none below.
D- 5	Chester Baggett	O. W. Findley	D	...	2	Tmu	...	....	......	J	D,S	..	11	9	
D- 6	Oscar Burkett	Oscar Burkett	..	84	2	Tmu	...	44	1947	J	D,S	..	11	6	
D- 7	Dora Roberson.....	H. Bates and O'Farrell.	D	67.8	2	Tmu	268	47.2	5-23-56	..	D	..	..	...	
D- 8	I. L. Roberson.....	....	D	71.7	2	Tmu	269	55.4	3-29-56	J	D,S	..	..	...	

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as CaCO$_3$ (ppm)	
D- 9	W. T. Allen.......	E. Kearley	D	76	4	Tmu	...	....	......	Cy	D	..	18	24	
D-10	H. B. Boyd.......	O. W. Findley	D	61.0	2	Tmu	276	39.0	11- 2-56	J	D	71	..	...	Casing: 2-in. to 56 ft.; 2-in. screen from 56 to 61 ft.
D-11	J. H. Powell......	....do........	D	44	2	Tmu	...	29	1955	P	D,S	70	..	...	Casing: 2-in. to 39 ft.; 2-in. screen from 39 to 44 ft.
D-12	H. T. Bates.......	....	D	80	2	Tmu	202	....	......	J	D,S	69	7	16	Casing: 2-in. to 70 ft.; 2-in. screen from 70 to 75 ft.
D-13	R. C. Smith.......	J. Logan........	D	101.6	5	Tg	208	39.6	5-15-57	..	N	..	..	...	
D-14	....do.........	O. W. Findley	D	80	2	Tmu	208	....	......	..	D,S	..	..	...	
D-15	C. D. Smith.......	J. Logan........	D	302.0	3	Tg Tm To Ty Tmb	169	+ .25	5-15-57	P	D,S	68	7	186	Casing: 3-in. to 120 ft.; none below. Electric log in files of U.S. Geol. Survey. Water level reported to have been 13 ft. above land surface when drilled in 1950.
D-16	....do.........	....do........	D	103.4	4	Tg	165	+ 1.0	5-15-57	P	N	67	4	149	
D-17	S. A. McGraw.....	....	..	60	2	Tmu	...	....	......	C	D,S	68	11	10	
D-18	A. B. Hart	O. W. Findley	D	56	2	Tmu	...	35	1951	..	D	..	11	8	
D-19	W. H. Martin......	....	..	....	2	Tmu	...	....	......	..	D	66	7	12	
D-20	J. B. Masingill	O. W. Findley	D	50	2	Tmu	...	....	......	J	D,S	..	7	18	Casing: 2-in. to 44 ft.; 2-in. screen from 44 to 50 ft.
D-21	Phelan Findley.....	Phelan Findley....	D	58	2	Tmu	...	41	1955	J	D	..	..	...	Casing: 2-in. to 53 ft.; 2-in. screen from 53 to 58 ft.
D-22	O. W. Findley.....	O. W. Findley	D	55	2	Tmu	245	35	1954	J	D	..	..	...	Casing: 2-in. to 50 ft.; 2-in. screen from 50 to 55 ft.
D-23	E. C. Johnson.....	Etheridge Plumbing Co.	D	160	2	Tmu	263	....	......	C	D	..	0	14	Casing and screen: 2-in. to 160 ft. See driller's log.
D-24	....do.........	....	..	90	..	Tmu	263	....	......	Cy	N	..	..	...	
D-25	E. E. McCall......	O. W. Findley	D	78	2	Tmu	...	....	......	Cy	D	67	36	7	

D-26	Elmer McGraw.	Elmer McGraw. . . .	D	20.9	1¼	Tmu	228	11.0	6- 5-56	P	D,S	66	14	6	
D-27	Alton Barrow.	C. O'Farrell	D	84	2	Tmu	. . .	64	1947	J	D	. .	11	6	
D-28	A. B. Richburg	O. W. Findley	D	80	2	Tmu	266	60	1941	C	D,S	. .	11	10	
D-29	J. J. Metzler.	. . . .	D	200	2	. .	217	18	1951	J	D,S	. .	11	11	
D-30	Clarence Janes.	Albert Beasley. . . .	J	75	2	Tmu	. . .	. . . .	. . . . . .	Cy	D	. .	7	7	
D-31	Herman Crosby	O. W. Findley	J	72	2	Tmu	250	60	1954	Cy	D	. .	. .	. . .	Casing: 2-in. to 67 ft.; 2-in. screen from 67 to 72 ft.
D-32	N. J. Barrow.	. . . . do	D	62	2	Tmu	. . .	54	1953	J	D	. .	11	31	
D-33	Buck Burnham	Etheridge Plumbing Co.	D	80	2	Tmu	270	. . . .	. . . . . .	J	D	71	7	6	Casing: 2-in. to 75 ft.; 2-in. screen from 75 to 80 ft. See driller's log.
D-34	Willis Baker	H. Bates and C. O'Farrell.	D	96	2	Tmu	. . .	30	. . . . . .	J	D	. .	. .	. . .	
D-35	Young Parker.	. . . .	D	96	2	Tmu	. . .	. . . .	. . . . . .	Cy	D	67	11	10	
D-36	Philip Andrews.	Flo Drilling Co. . . .	D	120	2	Tmu	277	. . . .	. . . . . .	J	D,S	. .	. .	. . .	Casing: 2-in. to 115 ft.; 2-in. screen from 115 to 120 ft. See driller's log.
D-37	Ocie Pugh	O. W. Findley	D	88	2	Tmu	. . .	44	. . . . . .	J	D,S	. .	. .	. . .	
D-38	Ed Leigh McMillan . .	. . . .	D	180	1¼	Tg Tm To	119	+ 28.4	1-13-55	. .	D	69	0	138	Measured flow 2.5 gpm on 1-11-55.
D-39	C. H. Massingill . . .	Etheridge Plumbing Co.	D	90	. .	Tmu	. . .	. . . .	. . . . . .	J	D	. .	2	30	See driller's log.
D-40	E. O. Wilson.	O. W. Findley	Du, J	107	2	Tmu	. . .	72	1953	J	D	. .	0	10	Casing: 2-in. to 102 ft.; 2-in. screen from 102 to 107 ft.
D-41	Lula Smith.	C. O'Farrell	D	39.4	6	Tmu	240	31.3	11- 1-56	M	D	68	11	18	
D-42	Sadie Wilson	Flo Drilling Co. . . .	D	48	2	Tmu	. . .	. . . .	. . . . . .	J	D	68	. .	. . .	Casing: 2-in. to 43 ft.; 2-in. screen from 43 to 48 ft.
D-43	F. R. Brown	White Brothers. . . .	D	59	2	Tmu	. . .	28	. . . . . .	J	D,S	. .	. .	. . .	Supplies several families.
D-44	Joe Salter	. . . .	. .	80	2	Tmu	. . .	50	. . . . . .	J	D,S	. .	. .	. . .	
*D-45	County Board of Education, N. Brewton Junior High School.	Gray Artesian Well Co.	D	180	4	Tmu	233	80	1953	Cy	P	69	. .	. . .	Casing: 4-in. to 170 ft.; 4-in. screen from 170 to 180 ft. Reported yield 17 gpm in 1954.
D-46	W. D. Odom	. . . .	. .	65	2	Tmu	. . .	25	. . . . . .	Cy	D,S	68	7	8	
D-47	Lawrence Smith	E. Kearley	D	176.8	4	Tc	245	87.9	12-17-56	J	D	. .	11	164	
D-48	Travis Lambeth	Marcus Blair.	D	400	4	Tg Tm To	241	79.5	12-13-56	T	D,S	. .	7	162	Casing: 4-in. to 294 ft.; none below.
D-49	Collins Steele.	O. W. Findley	D	68	2	Tmu	. . .	58	. . . . . .	J	D	. .	11	12	

Table 4.–*Records of wells in Escambia County, Ala.*–Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as CaCO3 (ppm)	
D-50	Lawrence James....	Lawrence James...	Dr	22	2	Tmu	...	14	1954	P	D	..	..	...	Casing and screen: 2-in. to 22 ft.
D-51	L. E. Langham	L. E. Langham ...	B	29.6	2	Tmu	136	20.8	4- 3-56	P	D,S	..	..	...	
D-52	W. C. Bolling	....	Dr	21.0	8	Tmu	144	4.8	4- 3-56	P	D,S	..	7	8	
D-53	John Singleton	Albert Beasley....	J	32	2	Tmu	...	....	......	J	D	68	..	...	
D-54	Roy O'Farrell	C. O'Farrell	B	30.1	7	Tmu	135	19.1	5-15-57	C	D	68	4	7	
D-55	Joe Stokes.........	Albert Beasley....	J	42	2	Tmu	...	30	1952	J	D	68	7	10	Casing and screen: 2-in. to 42 ft.
D-56	J. L. Blackburn....	Will O'Farrell	B	43.7	7	Tmu	208	41.9	7-22-55	M	D	68	0	9	
D-57	Frank O'Farrell....	C. O'Farrell	B	33.4	7 2	Tmu	195	23.5	7-22-55	J	D	..	26	30	
D-58	C. C. O'Farrell....	Will O'Farrell	B	46.4	7	Tmu	215	41.8	7-22-55	M	D	69	0	6	
D-59	Walter Wilson	Etheridge Plumbing Co.	D	400	4	Tg Tm To	228	80	1955	Cy	D	..	1	140	
D-60	E. M. Crutchfield...	....	B	31.0	8	Tmu	206	27.7	7-22-55	M	N	..	..	...	
D-61	D. B. Steele	D. B. Steele	B	28.1	6	Tmu	198	23.6	7-22-55	M	D	67	..	8	
D-62	Fred Tucker	David Steele......	B	20.0	7 1¼	Tmu	190	14.0	7-22-55	P	D	68	2	8	
D-63	Cecil Huff	O. W. Findley	D	40	..	Tmu	...	....	......	J	D,S	..	..	...	
D-64	Melvin Wilson	Robbins-McGowin..	D	80	2	Tmu	...	....	......	J	D	..	7	10	
D-65	Austin Morris	Albert Beasley....	J	45	2	Tmu	...	....	......	J	D	..	..	...	
D-66	W. D. Barrow	Etheridge Plumbing Co.	D	428	4	Tc Tb Tg Tm To	283	125.0	12-13-57	T	D	69	18	126	Casing: 4-in. to 242 ft.; none below. See driller's log.
D-67	J. P. Hall........	C. O'Farrell	B	45.4	8	Tmu	198	35.2	3-30-56	M	D	68	7	8	

D-68	Monk Smith		..	60	2	Tmu	...	....	......	C	D	..	7	12	
D-69	Walker Smith	C. O'Farrell	B	28.3	7	Tmu	195	17.4	3-30-56	M	D,S	65	..	...	
D-70	E. J. Jernigan		B	37.0	8	Tmu	221	32.2	11- 1-56	M	D	..	..	...	
D-71	A. J. Smith		B	37.4	8	Tmu	209	28.9	11- 1-56	M	D,S	..	..	...	
E- 1	Dennis Cain	E. Kearley	D	127	4	Tc	240	80	1948	J	D,S	..	4	100	
E- 2	A. J. Barnes	O. W. Findley	D	61	2	Tmu	...	54	1954	J	D,S	68	11	15	Casing and screen: 2-in. to 61 ft.
E- 3	J. J. Barnes	O. W. Findley and H. Bates.	D	57	2	Tmu	...	27	1954	J	D,S	..	..	...	Casing and screen: 2-in. to 57 ft.
E- 4	R. F. Lowrey	Etheridge Plumbing Co.	D	57	2	Tmu	230	37	1954	J	D,S	..	7	8	Casing: 2-in. to 52 ft.; 2-in. screen from 52 to 57 ft. See driller's log.
E- 5	Prestly Dyes	Prestly Dyes	B	45.4	8	Tmu	241	41.2	7-21-55	M	D	69	0	8	
E- 6	Lela Cooper	R. T. Cooper	Dr	40	2	Tmu	...	28	1954	P	D	69	1	7	Casing: 2-in. to 36 ft.; 2-in. screen from 36 to 40 ft.
E- 7	....do	Len Cooper	B	16.3	1¼	Tmu	214	11.6	7-21-55	P	D	70	2	10	
E- 8	Rufus Smith		D	85	3	Tmu	...	50	......	J	D,S	..	1	15	
E- 9	Lonzo Smith	Lonzo Smith	Du	27.1	36	Tmu	244	13.9	7-15-55	M	S	70	17	22	Test well drilled to 210 ft.
E-10	Loree Wright	George Godwin	B	35.9	6	Tmu	214	27.8	5-15-57	M	N	68	1	6	
E-11	Floyd Madden		B	41.9	7	Tmu	224	38.1	7-15-55	M	D	..	..	...	
E-12	....do	Etheridge Plumbing Co.	D	120	2	Tmu	238	....	......	Cy	D	..	1	10	Casing: 2-in. to 115 ft.; 2-in. screen from 115 to 120 ft. See driller's log.
E-13			B	24.7	7	Tmu	204	16.2	7-20-55	M	N	..	..	...	
E-14	B. B. Gunn		B	41.3	7	Tmu	234	36.5	7-21-55	M	D	69	14	22	
E-15	J. E. Blair	J. E. Blair	B	35	7	Tmu	...	28	1951	Cy	D	68	4	12	
E-16	....do	....do	B	20.7	1¼	Tmu	219	16.7	7-20-56	P	D	70	8	8	
E-17	G. S. Chance		B	22.2	7	Tmu	219	15.4	7-20-56	M	D	70	2	8	
E-18	C. H. Pugh		B	25	2	Tmu	...	14	1954	J	D	..	1	11	
E-19	....do		B	28.4	9	Tmu	221	19.5	7-20-55	M	D	..	..	...	
E-20	A. W. Blair	C. O'Farrell	B	51.0	8	Tmu	246	46.0	3-20-56	M	D	69	..	...	
E-21	D. M. Blair		D	....	..	Tmu	...	....	......	J	D	..	..	...	
E-22	Lawrence Langham	L. Langham	B	47	2	Tmu	...	27	1955	J	D,S	..	..	...	Casing and screen: 2-in. to 47 ft.
E-23	G. S. Morgan	C. O'Farrell	B	27.7	8	Tmu	...	22.7	4- 8-56	M	D	..	..	...	
E-24	A. G. Prichett		B	16.0	1¼	Tmu	...	5.3	3-29-56	P	D,S	..	..	...	

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level: Above (+) or below land surface (feet)	Water level: Date of measurement	Method of lift	Use of water	Field determinations: Temperature (° F)	Field determinations: Chloride (Cl) (ppm)	Field determinations: Hardness as $CaCO_3$ (ppm)	Remarks
E-25	I. J. Wilson.......	C. O'Farrell	D	60	2	Tmu	...	40	1955	J	D	68	11	8	Casing and screen: 2-in. to 60 ft.
E-26	A. J. Shell	O. W. Findley	D	70	2	Tmu	...	53	1952	J	D,S	..	..	...	Casing and screen: 2-in. to 70 ft.
E-27	W. C. Gibson......	E. James	B	47.0	8	Tmu	230	40.0	3-30-56	M	D	..	..	...	
E-28	I. L. Talberd......	H. Bates.........	B	52	2	Tmu	...	44	1955	J	D	..	..	...	
E-29	Aime Pettis.......	....	B	46.0	8	Tmu	231	40.2	3-30-56	M	D,S	..	..	...	
E-30	W. H. Emmons	....	B	60	2	Tmu	...	55	1940	J	D,S	..	11	6	Casing and screen: 2-in. to 60 ft.
*E-31	Ely Cooper	Etheridge Plumbing Co.	D	141	2	Tmu	...	111	1955	J	D,S	69	7	49	Casing and screen: 2-in. to 141 ft.
E-32	Sam Ivey..........	A. Beasley	D	56	2	Tmu	...	35	1951	J	D,S	..	..	...	Casing and screen: 2-in. to 56 ft.
E-33	Alvin Pugh........	....	B	40	1½	Tmu	...	....	......	Cy	D	68	1	8	
E-34	W. D. Franklin	W. D. Franklin ...	B	21	1½	Tci	...	....	......	P	M	..	..	...	
E-35	Lee Chavers	Lee Chavers	D	30	2	Tci	...	26	1952	J	D	70	..	...	Casing: 2-in. to 26 ft.; 2-in. screen from 26 to 30 ft.
E-36	Herbert Pettis	....	B	22.5	8	Tci	282	19.5	......	..	N	..	..	...	
E-37	Charles Johnson....	....	B	28.0	8	Tci	274	19.5	......	M	D	71	2	6	
E-38	Autry Hammac.....	Marcus Blair.....	D	278	4 2	Tg Tm To	279	140	1949	Cy	D,S	..	2	171	
E-39	T. O. Wilson......	C. O'Farrell	B	52.8	8	Tmu	...	50.0	4- 8-56	M	S	..	..	...	
E-40	W. C. Gibson......	E. James	B	60.0	8	Tmu	222	50.7	4- 8-56	M	D,S	68	14	14	
E-41	R. M. Darby......	O. W. Findley	D	50	2	Tmu	215	22.7	4- 4-56	J	D,S	..	..	...	Casing and screen: 2-in. to 50 ft.
E-42	N. G. Baggett	.....do........	D	28	2	Tmu	...	....	......	J	D,S	..	7	6	Casing and screen: 2-in. to 28 ft.
E-43	G. W. Martin......	H. Bates........	D	45	2	Tmu	...	35	6- -55	J	D,S	..	11	10	
E-44	T. B. Cook.......	White Brothers....	D	40	2	Tmu	...	....	......	P	D	..	11	8	

*E-45	J. L. Burch.	Marcus Blair.	D	400	4	Tg Tm To	219	51.8	5-15-57	T	D,S	. .	7	162	Observation well. Casing: 4-in. to 290 ft.; none below. See driller's log.
E-46	G. W. Lundy	White Brothers. . . .	D	46.6	8	Tmu	224	34.0	4- 3-56	J	D,S	. .	. .	. . .	
E-47	J. H. Smith.	Flo Drilling Co. . . .	D	63	2	Tmu	. . .	. . . .	. . . . . .	J	D,S	. .	. .	. . .	Casing: 2-in. to 58 ft.; 2-in. screen from 58 to 63 ft.
E-48	James McGougin. . . .	. . . .	. .	79	. .	Tmu	. . .	50	. . . . . .	J	D,S	. .	. .	. . .	
E-49	W. G. Baggett	W. G. Baggett	. .	30	2	Tmu	. . .	. . . .	. . . . . .	P	D,S	. .	. .	. . .	
E-50	R. J. Martin	O. W. Findley	D	68	2	Tmu	. . .	. . . .	. . . . . .	J	D,S	70	11	8	Casing and screen: 2-in. to 68 ft.
E-51	D. W. Baggett	D. W. Baggett	Dr	21	1½	Tmu	. . .	18	. . . . . .	P	D	. .	. .	. . .	Casing and screen: 1½-in. to 21 ft.
E-52	E. R. Pettis	E. R. Pettis	B	30	1¼	Tci	. . .	. . . .	. . . . . .	Cy	N	. .	. .	. . .	Casing: 1¼-in. to 25 ft.; 1¼-in. screen from 25 to 30 ft.
E-53	. . . . do	. . . . do	B	23.9	8	Tci	273	19.7	7-14-55	M	N	. .	. .	. . .	
E-54	C. E. Hammac.	C. O'Farrell	B	33.0	8	Tci	274	22.5	5-15-57	M	D	68	26	66	
E-55	E. E. Hammac.	. . . . do	B	20.8	7	Tci	270	11.2	7-14-56	M	D,S	. .	4	43	
E-56	Roy Stoner.	Marcus Blair.	D	500	4 2	Tg Tm To	269	. . . .	. . . . . .	Cy	D,S	. .	4	126	Casing: 4-in. to 238 ft.; 2-in. from 238 to 290 ft.; none below.
E-57	W. C. Madden	Flo Drilling Co. . . .	D	45	2	Tmu	. . .	18	4-11-57	J	D	. .	. .	. . .	Casing: 2-in. to 40 ft.; 2-in. screen from 40 to 45 ft. Measured yield 9.0 gpm on 4-11-57. See driller's log.
F- 1	L. S. Nall.	Etheridge Plumbing Co.	D	302	2	. . .	332	187	1955	Cy	D,S	68	7	99	Casing: 2-in. to 298 ft.; 2-in. screen from 298 to 302 ft.
F- 2	J. J. Odom	. . . .	B	49.5	8	Tci	346	47.2	3-22-56	M	D	. .	. .	. . .	
*F- 3	W. F. Watson	Etheridge Plumbing Co.	B	270	3 2	Tmu	342	17	1955	Cy	D	68	. .	. . .	Casing: 3-in. and 2-in. to 260 ft.; 2-in. screen from 260 to 270 ft. See driller's log.
F- 4	Marvin Lisenby	. . . .	B	67	. .	Tci	. . .	. . . .	. . . . . .	J	D,S	. .	. .	. . .	
F- 5	Curtis Lisenby	. . . .	B	57.1	8	Tci	341	53.5	3-22-56	M	D	68	. .	. . .	
F- 6	Dewey Hawkins.	. . . .	D	72	2	Tci	335	15	. . . . . .	J	D,S	69	11	8	
F- 7	T. J. Hawkins	. . . .	B	41.8	8	Tci	. . .	41.0	7-14-55	. .	N	. .	. .	. . .	
F- 8	D. A. Barnett	Otha Johnson	D	60	2	Tci	338	42	. . . . . .	J	D,S	. .	. .	. . .	Casing and screen: 2-in. to 60 ft.
F- 9	. . . . do	B. B. Booker.	D	38	2	Tci	. . .	. . . .	. . . . . .	J	D	. .	. .	. . .	Casing and screen: 2-in. to 38 ft.
F-10	Anna Harrison	. . . .	B	55.6	6	Tci	330	48.2	3-22-56	M	D,S	69	. .	. . .	
F-11	. . . . do	. . . .	B	46.0	8	Tci	. . .	42.1	3-22-56	M	D	. .	. .	. . .	
F-12	A. D. Kelly Estate . .	. . . .	B	52.3	9	Tci	. . .	. . . .	. . . . . .	. .	. .	. .	. .	. . .	Dry on 7-14-55.

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (°F)	Chloride (Cl) (ppm)	Hardness as CaCO3 (ppm)	
*F-13	Escambia County Board of Education.	Marcus Blair	B	376.0	4 3	Tg Tm To	176	+ 7.8	4-14-55	J	P	70	1	112	Casing: 4- to 3-in. to 302 ft.; none below. Measured flow 11.5 gpm on 4-14-55. Electric log in files of U.S. Geol. Survey.
F-14	....do..........	....	..	...	2	Tm To (?)	178	....	......	F	N	67	..	...	Flows less than 1 gpm.
F-15	....do..........	....	..	...	2	Tm To (?)	176	+ 1.0	5-11-55	C	P	..	1	45	Measured flow 1 gpm on 5-11-55.
F-16	....do..........	....	..	...	..	Tm To (?)	176	+ 3.4	3- 1-55	F	N	67	2	116	Measured flow 2.3 gpm on 3-1-55.
F-17	A. D. Grissott.....	....	D	...	2½	Tg (?)	167	....	......	C	D	69	2	112	Estimated flow 6 gpm on 3-1-55. Leaks around casing.
F-18	E. W. Tew	-- Wooten........	D	...	2½	Tg (?)	166	....	......	C	D,S	69	2	116	Measured flow 1.7 gpm on 3-1-55. Leaks around casing.
F-19	Margaret K. Gilmore	....do........	D	...	2½	Tg (?)	170	+ 14.0	3- 1-55	F	D	71	1	80	
F-20	....do..........	....do........	D	...	2½	Tg (?)	166	....	......	F	S	69	2	111	Estimated flow 5 gpm on 3-1-55.
F-21	....do..........	....do........	D	245	..	Tg	163	....	......	F	D	..	..	...	Estimated flow 10 gpm on 3-1-55. Leaks around casing. Supplies several houses.
F-22	W. E. Thompson ...	Will Franklin.....	D	147	2½	Tmu	166	+ 7	3- 1-55	C	D	69	2	118	Measured flow 4.7 gpm on 3-1-55. Leaks around casing.
F-23	Margaret K. Gilmore	....	..	87.5	2½	Tmu	163	+ .8	3- 1-55	F	N	69	1	68	Measured flow 3.3 gpm on 3-1-55.
F-24	H. W. Pruett......	-- Wooten........	D	210	2½	Tc	167	....	......	F	D,S	69	2	120	Leaks around casing. Supplies several houses.
F-25	C. W. Beasley.....	....	B	36.5	8	Tci	307	23.9	3-26-56	J	D,S	..	..	...	
F-26	Lizzie Beasley.....	....	D	...	..	Tmu	...	....	......	Cy	D,S	..	..	...	
F-27	Ralph Beasley	Rufus Bell.......	J	90	2½	Tci	...	60	......	J	D,S	..	..	...	

F-28	Arthur Beasley.	. . . . do	D	66	2½	Tci	. . .	60	1952	J	D,S	. .	. .	. . .	
F-29	Albert Bell	Etheridge Plumbing Co.	D	85	2	Tci	. . .	60	1952	Cy	D,S	. .	. .	. . .	Casing: 2-in. to 80 ft.; 2-in. screen from 80 to 85 ft. See driller's log.
F-30	Luther Rawls	. . . .	B	33.9	8	Tci	. . .	29.8	9- 9-55	M	D	68	6	16	
G- 1	W. E. Grissett.	W. E. Grissett. . . .	B	31.6	8	Tci	333	30.4	3-27-56	M	D,S	. .	. .	. . .	
G- 2	E. C. Grissett.	E. C. Grissett. . . .	D	110	2	Tci	332	82	1943	Cy	D,S	. .	. .	. . .	Casing: 2-in. to 105 ft.; 2-in. screen from 105 to 110 ft.
G- 3	Leroy Grissett.	Leroy Grissett. . . .	. .	41.8	8	Tci	. . .	30.2	3-27-56	M	D,S	69	. .	. . .	
G- 4	D. A. Barnett	. . . .	B	30.6	8	Tmu	291	18.6	3-27-56	M	D	66	. .	. . .	
G- 5	A. M. Coley	. . . .	B	29.0	8	Tmu	. . .	23.5	3-27-56	M	N	. .	. .	. . .	
G- 6	Duke Brown.	Duke Brown.	B	69	2	Tci	341	47	1947	J	D,S	. .	14	8	
G- 7	George Morton.	. . . .	J	50	2	Tci	. . .	. . . .	. . . . . .	J	D	. .	. .	. . .	
G- 8	Ollie Gilmore.	C. O'Farrell	B	38.0	8	Tci	339	26.4	3-22-56	M	D,S	68	. .	. . .	
G- 9	E. B. Smith.	-- Godwin	D	70	2½	Tci	. . .	57	1945	Cy	D,S	66	3	8	
G-10	Charles Dawson	. . . .	J	80	2	Tci	. . .	70	1951	J	D	. .	. .	. . .	Casing and screen: 2-in. to 80 ft.
G-11	J. W. Hobbs	. . . .	B	60	2	Tci	. . .	. . . .	. . . . . .	Cy	D	. .	. .	. . .	Casing and screen: 2-in. to 60 ft.
G-12	G. W. Godwin	G. W. Godwin	B	57.2	8	Tci	. . .	54.0	2- 9-56	M	D,S	. .	. .	. . .	
H- 1	A. M. Coley	B. B. Booker.	D	40	2	Tci	. . .	26	1952	J	D	. .	. .	. . .	
H- 2	J. L. Tuberville. . . .	. . . . do	D	59	2	Tci	347	47	1948	J	D	71	7	10	Casing and screen: 2-in. to 59 ft.
H- 3	D. D. Lambert.	D. D. Lambert. . . .	D	58	2	Tci	. . .	. . . .	. . . . . .	J	D	72	11	6	Casing and screen: 2-in. to 58 ft.
H- 4	E. H. Cruit.	B. B. Booker.	D	55	2	Tci	. . .	. . . .	. . . . . .	J	D,S	. .	3	5	Casing and screen: 2-in. to 55 ft. Supplies 100 cows.
H- 5	Clyde Purnell.	. . . . do	D	70	2	Tci	324	55	1953	J	D	. .	11	6	Casing and screen: 2-in. to 70 ft.
H- 6	Carl Dreaden.	Carl Dreaden.	D	60	2	Tci	. . .	46	1951	J	D	. .	18	14	
H- 7	Otto Lane	Otto Lane	D	40	2	Tci	. . .	27	. . . . . .	J	D	. .	. .	. . .	
H- 8	Cecil Robinson.	Etheridge Plumbing Co.	D	60	2	Tci	327	40	1952	J	D,S	70	7	6	
H- 9	Lennard Chunn.	B. B. Booker.	B	93	2	Tci	345	65	1942	Cy	D,S	. .	. .	. . .	Casing and screen: 2-in. to 93 ft.
H-10	M. W. Morris	. . . . do	B	115	2	Tci	. . .	. . . .	. . . . . .	Cy	D,S	. .	7	8	
H-11	Irby Williams.	. . . .	B	41.5	8	Tci	331	39.2	5-21-56	M	D	. .	. .	. . .	Inadequate supply for domestic use.
H-12	J. C. Croley	. . . .	B	39.9	8	Tci	. . .	34.0	5-21-56	M	D	. .	. .	. . .	Do.
H-13	J. B. Day	Etheridge Plumbing Co.	D	60	2	Tci	332	44	1954	J	D,S	. .	7	7	Casing and screen: 2-in. to 60 ft.

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level: Above (+) or below land surface (feet)	Water level: Date of measurement	Method of lift	Use of water	Field determinations: Temperature (°F)	Field determinations: Chloride (Cl) (ppm)	Field determinations: Hardness as $CaCO_3$ (ppm)	Remarks
H-14	Arthur Dreaden	Arthur Dreaden	D	49	2	Tci	...	39	1948	Cy	D	70	21	32	Casing and screen: 2-in. to 49 ft.
H-15	J. O. Crowley	B. B. Booker......	D	60	2	Tci	...	45	1954	J	D	..	..	...	
H-16	W. F. Vickrey.....	....do.........	D	55	2	Tci	...	41	1945	J	D	..	..	...	
H-17	Lloyd Dreaden	....	B	40.3	8	Tci	...	34.4	5-16-57	M	N	..	..	...	
H-18	G. W. Dreaden.....	G. W. Dreaden.....	D	57	2	Tci	...	45	1951	J	D,S	..	..	...	
H-19	J. O. Crowley	J. O. Crowley	D	54	2	Tci	...	39	1944	J	D	70	14	10	
H-20	W. J. Vickrey	W. J. Vickrey	D	35	2	Tci	...	23	1943	Cy	D,S	..	..	...	
H-21	Huxford Baptist Church.	....	D	45	2	Tci	...	35	......	P	D	67	11	7	
H-22	Dewitt Cruit.	....	D	...	2	Tci	...	....	......	..	..	..	..	...	
H-23	Farrish McGhee....	Etheridge Plumbing Co.	D	42	2	Tci	324	30	......	J	D	..	7	7	
H-24	R. O. Pryor	R. O. Pryor	D	34	1¼	Tci	...	23	......	P	D	..	..	...	
H-25	Escambia County Board of Education.	Etheridge Plumbing Co.	D	55	4	Tci	324	22	1953	T	P	..	11	6	School supply. See driller's log.
H-26	R. O. Pryor	Rufus Bell........	D	38	2	Tci	...	26	1944	..	D,S	..	7	5	Casing and screen: 2-in. to 38 ft.
H-27	...do.........	R. O. Pryor	D	29.0	1¼	Tci	323	18.4	4-21-56	J	D	..	7	4	
H-28	St. Louis and San Francisco Railroad.	....	..	37.0	8	Tci	323	18.3	4-19-57	..	N	..	..	...	Reported to have flowed until 1947.
H-29	W. O. Parmer.....	W. O. Parmer.....	D	29	2	Tci	...	19	......	..	D	..	..	...	
H-30	Tom Vickrey	Tom Vickrey	D	26.4	1¼	Tci	322	17.6	5-25-56	P	D	67	11	6	
H-31	Z. H. Cox........	Etheridge Plumbing Co.	D	28	2	Tci	...	....	......	P	D	..	..	...	Casing and screen: 2-in. to 28 ft.
H-32	Frank Coker	Frank Coker	D	40	2	Tci	324	26	1952	J	P	..	..	...	Casing and screen: 2-in. to 40 ft.

H-33	J. W. Lassitter	J. W. Lassitter	D	50	2	Tci	...	35	1953	J	D	..	..	...	
H-34	Carl Jones	Rufus Bell........	D	60	2	Tci	...	48	1953	J	D	..	..	...	Casing and screen: 2-in. to 60 ft.
H-35	R. C. Booker......	B. B. Booker......	D	35	2	Tci	327	23	......	J	D	69	7	8	Casing and screen: 2-in. to 35 ft.
H-36	C. E. Hood	....	D	37.3	8	Tci	322	29.7	6- 4-56	M	D	..	..	...	
H-37	Alger Sullivan Lumber Co.	....	..	60	2	Tci	...	45	......	J	D,S	..	..	...	
H-38	Nathan Coker......	Nathan Coker......	D	60	2	Tci	...	45	1954	J	D,S	..	..	...	Casing and screen: 2-in. to 60 ft.
H-39	M. F. Etheridge....	Etheridge Plumbing Co.	D	73	3	Tci	...	50	1952	J	D,S	..	..	...	See driller's log.
H-40	G. N. Coker	G. N. Coker	D	50	2	Tci	...	35	1946	J	D,S	..	..	...	
H-41	Melvin Folmer.....	Melvin Folmer.....	D	25	1¼	Tci	...	16	......	..	D	..	..	...	Casing and screen: 1¼-in. to 25 ft.
H-42	W. T. Daniels	W. T. Daniels	D	28	1¼	Tci	...	14	1945	..	D	..	11	16	Casing and screen: 1¼-in. to 28 ft.
H-43	W. C. Keller......	Etheridge Plumbing Co.	D	45	2	Tci	323	....	......	J	D	..	..	...	Casing: 2-in. to 40 ft.; 2-in. screen from 40 to 45 ft. See driller's log.
H-44	L. Lomax	-- Peebles........	D	108	2	Tci	...	58	......	J	D,S	..	7	13	Casing and screen: 2-in. to 108 ft.
H-45	Leonard Snyder	Leonard Snyder	D	32	2	Tci	...	18	1952	P	D	..	..	...	Casing and screen: 2-in. to 32 ft.
H-46	P. L. Dees	P. L. Dees	D	98	2	Tci	311	33	1955	J	D	70	7	6	See driller's log.
H-47	A. J. Snyder	A. J. Snyder	J	48	2	Tci	...	36	......	Cy	D,S	69	11	10	
H-48	E. A. Ryland......	E. A. Ryland......	D	42	2	Tci	...	37	1951	J	D,S	..	..	...	Casing and screen: 2-in. to 42 ft.
H-49	G. D. Summerlin ...	Etheridge Plumbing Co.	D	72	2	Tci	328	48	1955	Cy	D	..	..	...	Casing and screen: 2-in. to 72 ft.
H-50	T. J. Freeman.....	.....do..........	D	...	2	Tci	314	....	......	J	D	70	4	4	
*H-51	D. Parker.........	.....do..........	D	62	2	Tci	319	32	1953	J	D,S	70	..	...	Casing: 2-in. to 58 ft.; 2-in. screen from 58 to 62 ft. See driller's log.
H-52	A. T. Vickrey	-- Childs.........	D	42	2	Tci	...	....	......	J	D	..	..	...	
H-53	W. D. Cruit.......	B. B. Booker......	J	46	2	Tci	...	26	1951	J	D,S	..	..	...	Casing: 2-in. to 42 ft.; 2-in. screen from 42 to 46 ft.
H-54	W. A. Mason......	-- Childs.........	D	33	2	Tci	...	22	1950	..	D	69	11	16	
H-55	W. J. Salter	W. J. Salter	D	37	2	Tci	...	26	1954	J	D,S	..	..	...	
H-56	J. H. Nall........	J. H. Nall........	D	34	2	Tci	...	29	......	J	D	..	11	6	
H-57	Charles Morris	-- Peebles........	D	112	2	Tci	...	47	1950	J	D	70	11	14	Casing and screen: 2-in. to 112 ft.
H-58	R. R. Manning.....	E. Kearley	J	72	2	Tci	...	52	1955	J	S	..	7	6	
H-59	J. H. Smith.......	....	D	90	2	Tci	...	....	......	Cy	D	67	7	5	Casing and screen: 2-in. to 90 ft.

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as CaCO3 (ppm)	
H-60	Ala. Div. of Forestry	....	..	44	2	Tci	...	22	......	P	D	..	7	5	Casing and screen: 2-in. to 44 ft.
H-61	J. C. Coker.......	J. C. Coker.......	D	48	2	Tci	...	36	......	J	D,S	..	7	8	Casing and screen: 2-in. to 48 ft.
H-62	J. H. Parker......	Etheridge Plumbing Co.	D	144	2	Tmu	315	....	......	J	D	..	11	8	
H-63	J. D. Leatherwood..	B. B. Booker......	J	43	2	Tci	...	28	1953	J	D,S	70	7	6	
H-64	J. Mack	Etheridge Plumbing Co.	D	47	2	Tci	318	33	1954	J	D	..	..	...	
H-65	T. L. Parker......	Rufus Bell.........	D	40	2	Tci	...	26	1950	J	D,S	..	..	...	Casing and screen: 2-in. to 40 ft. Supplies 100 hogs and 10 cows.
H-66	E. J. Chavers.....	....	D	36	2	Tci	...	28	1954	J	D	..	..	...	Casing and screen: 2-in. to 36 ft.
H-67	W. D. Ross.......	....	B	35	8	Tci	...	23	1936	..	D,S	..	..	...	
*H-68	Hauss State Forestry Nursery.	Layne-Central Co...	D	290	18 8	Tmu	322	127.2	6-24-57	T	D Irr	70	..	...	Casing: 18-in. to 223 ft.; 8-in. from 223 to 228 ft., and 253 to 266 ft.; 8-in. screen from 228 to 253 ft., and from 266 to 281 ft. Measured drawdown 19.4 ft. after 24 hours pumping at 323 gpm on 7-23-57 and 7-24-57. Length of air line 180 ft. See driller's log.
H-69	J. L. Cruits	B. B. Booker......	D	56	2	Tci	...	38	1952	J	D,S	..	..	...	Casing and screen: 2-in. to 56 ft.
H-70	H. A. Mason	D. C. Trouteman...	D	65	2	Tci	...	....	......	Cy	D	..	..	...	Casing and screen: 2-in. to 65 ft.
H-71	John Cruit........	....	D	55	2	Tci	...	35	1951	J	D	..	..	...	
H-72	A. A. Bell........	B. B. Booker......	D	50	2	Tci	...	41	1950	J	D	..	..	...	Supplies 100 hogs and 30 cows.
H-73	Rue Mason........	D. C. Trouteman...	D	62	2	Tci	...	....	......	Cy	D	..	..	...	
H-74	J. R. Gohagin	J. R. Gohagin	D	60	2	Tci	...	45	......	J	D	..	..	...	Casing and screen: 2-in. to 60 ft.
H-75	R. G. Dulaney	R. G. Dulaney	D	59	2	Tci	...	48	1951	J	D	70	7	7	Casing: 2-in. to 56 ft.; 2-in. screen from 56 to 59 ft.
H-76	....do..........	Rufus Bell........	D	67	2	Tci	...	45	1952	J	D	..	..	...	Casing: 2-in. to 63 ft.; 2-in. screen from 63 to 67 ft.

H-77	J. R. Ward........	J. R. Ward........	D	82	2	Tcl	...	37	......	J	D,S	..	..	...	Casing and screen: 2-in. to 82 ft.
H-78	Ruth Parker........	Etheridge Plumbing Co.	D	60	2	Tcl	...	33	1952	J	D	..	..	...	
I- 1	Lonnie Greer.......	....	..	....	..	Tcl	...	....	......	Cy	D	..	..	13	
I- 2	H. A. Boone	B. B. Booker.......	D	105	1¼	Tcl	...	....	......	P	D,S	..	..	...	
I- 3	S. P. Reynolds.....	....	B	38.6	8	Tcl	319	36.5	4-15-55	M	N	..	..	...	
I- 4	Earl Adams........	....	..	....	..	Tcl	...	....	......	Cy	D	67	4	5	
I- 5	Stephen Parson.....	Stephen Parson.....	B	49.9	8	Tcl	308	43.9	6- 7-56	J	D,S	..	7	6	
I- 6	James Hall	Rufus Bell.........	D	60	2	Tcl	307	45	......	J	D,S	70	..	...	
I- 7	C. H. Driskell.....	C. H. Driskell.....	D	62	2	Tcl	306	50	1950	J	D	..	11	10	
I- 8	S. B. Hall.........	E. Catrett.........	D	43	2	Tcl	...	....	......	Cy	D,S	69	0	5	Casing and screen: 2-in. to 43 ft.
I- 9	Rogers Hadley	Rogers Hadley	D	40	2	Tcl	...	....	......	J	D	..	0	19	
I-10	R. L. Hadley.......	....	B	32.0	8	Tcl	...	29.0	4-15-56	M	S	69	83	25	
I-11	Robert Hadley, Jr...	Etheridge Plumbing Co.	D	48	2	Tcl	305	....	......	J	D	..	..	...	See driller's log.
I-12	J. M. Smith.......	....	B	36.3	6	Tcl	316	35.6	4-15-56	M	N	..	..	...	
I-13	....do..........	-- Childs..........	D	38	2	Tcl	...	....	......	J	D	68	0	12	
I-14	Harry Akin	....	D	60	2	Tcl	...	50	1953	J	D,S	..	..	...	
I-15	Alvis Respress.....	Alvis Respress.....	D	60	2	Tcl	286	46	1951	J	D,S	..	..	...	
I-16	J. L. Coon	J. L. Coon	D	60	2	Tcl	298	48	1953	Cy	D	71	7	14	
I-17	J. H. Dannelley	Rufus Bell.........	D	62	2	Tcl	300	48	1950	J	D,S	71	11	7	Casing and screen: 2-in. to 62 ft.
I-18	J. W. Respress	J. W. Respress	D	60	2	Tcl	300	46	......	J	D,S	..	..	...	
I-19	A. E. Mack........	Rufus Bell.........	D	40	2	Tcl	296	28	1949	J	D	..	11	10	Casing and screen: 2-in. to 40 ft.
I-20	R. D. Morgan	Etheridge Plumbing Co.	D	43	2	Tcl	294	28	1955	J	D	..	..	...	Casing: 2-in. to 38 ft.; 2-in. screen from 38 to 43 ft. See driller's log.
I-21	W. O. Day.........	....	D	73	2	Tcl	...	48.6	6-11-56	J	D,S	..	14	9	
J- 1	Walter Robinson....	Rufus Bell.........	D	42	2	Tcl	...	30	......	J	D	..	..	...	
J- 2	Leona Bowman.....	....	B	43.0	10	Tcl	300	37.8	6- 7-56	M	D	..	..	...	
J- 3	Walter Mack	....	D	50	2	Tcl	...	40	1955	J	D	70	..	...	
J- 4	Walter Robinson....	Rufus Bell.........	D	44	2	Tcl	...	30	......	J	D,S	..	..	...	Casing and screen: 2-in. to 44 ft.
J- 5	Frank Currie Gin Co.	Etheridge Plumbing Co.	D	80	4	Tcl	302	....	......	J	Ind	..	14	10	Casing: 4-in. to 70 ft.; 2-in. screen from 70 to 80 ft. See driller's log.

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
J- 6	Elsie Drewrell	....	B	48.6	8	Tci	...	34.4	6-12-56	M	D	..	..	...	
J- 7	Escambia County Board of Education.	Etheridge Plumbing Co.	D	80	3	Tci	298	45	1951	J	P	..	11	8	Casing: 3-in. to 70 ft.; 3-in. screen from 70 to 80 ft. Reported yield 30 gpm after pumping 48 hours in 1951. Used for school supply. See driller's log.
J- 8	Fred Drew	Rufus Bell	D	52	2	Tci	...	30	1953	J	D	..	7	9	Casing and screen: 2-in. to 52 ft.
J- 9	Inez Presswood	....	B	41.7	8	Tci	300	34.3	6-14-56	M	D	..	..	...	
J-10	E. D. Drew	E. D. Drew	J	42	2	Tci	...	23	1955	J	D	..	..	...	
J-11	J. L. Jones	....	D	45	2	Tci	...	35	1956	J	D,S	..	..	...	
J-12	Bernice Lassiter	....	D	58	2	Tci	...	38	1951	J	D,S	70	25	10	Casing and screen: 2-in. to 58 ft.
J-13	Buford Coon	Buford Coon	D	55	2	Tci	...	36	1956	J	D,S	..	..	...	Casing and screen: 2-in. to 55 ft.
J-14	....do	....do	D	52	2	Tci	...	36	1953	J	D,S	..	..	...	Casing and screen: 2-in. to 52 ft.
J-15	M. L. Murph	Rufus Bell	D	60	2	Tci	...	....	......	J	D,S	71	7	9	
J-16	J. A. Weaver	J. A. Weaver	D	68	2	Tci	...	52	1946	J	D,S	..	..	...	Casing and screen: 2-in. to 68 ft.
J-17	Sandy McCullough	....	B	40.0	8	Tci	...	33.0	6-26-57	M	D	..	..	...	
J-18	M. C. Lassitter	Etheridge Plumbing Co.	D	65	2	Tci	316	....	......	J	D,S	70	..	...	
J-19	Inez Presswood	....	D	63	2	Tci	...	43	......	J	D	70	11	22	Casing and screen: 2-in. to 63 ft.
J-20	Kendall Taylor	....	Dr	....	8 2	Tci	313	43.2	6-26-56	J	D	..	7	13	
J-21	E. Strength	E. Strength	B	43.0	9	Tci	314	35.6	7-16-56	M	D	68	11	8	
J-22	....do	....do	B	49.5	9	Tci	312	40.9	7-16-56	M	D	68	..	...	
J-23	M. E. Wasdin	....do	D	45	8	Tci	...	25	1920	J	D	70	11	8	
J-24	W. L. Bray	W. L. Bray	D	35	2	Tci	...	26	......	J	D,S	..	..	...	Casing and screen: 2-in. to 35 ft.

J-25	J. T. Shiver	D. Gibbs..........	D	50	2	Tcl	...	40	1952	J	D	..	21	19	Casing and screen: 2-in. to 50 ft.
J-26	....do..........	Rufus Bell.........	D	228	2	Tmu	...	200	1952	Cy	D	..	..	...	
*J-27	L. B. Still.........	Etheridge Plumbing Co.	D	50	2	Tcl	309	35	1954	J	D,S	..	..	...	Do.
J-28	C. T. Helton.......	....do..........	D	40	1¼	Tcl	312	25	1952	J	D,S	..	11	10	
J-29	J. W. Caraway......	J. W. Caraway.....	D	65	2	Tcl	...	50	1950	J	D,S	..	..	...	
J-30	Aubry Steadham	Etheridge Plumbing Co.	D	...	2	Tcl	311	....	......	..	...	..	..	...	
J-31	Bertha Steadham....	....do..........	D	51	2	Tcl	313	32	1950	J	D,S	..	11	5	
J-32	John Steadham	....do..........	D	52	2	Tcl	293	....	......	J	D	..	..	...	Casing: 2-in. to 47 ft.; 2-in. screen from 47 to 52 ft. See driller's log.
J-33	Rufus Steadham	Rufus Steadham	D	42	1¼	Tcl	...	32	......	P	D	..	..	...	
J-34	W. P. Bates	Rufus Bell.........	D	24.5	1¼	Tcl	310	17.0	......	P	D,S	69	18	27	
J-35	Murray Bryant.....	....	D	33	1¼	Tcl	...	20.0	......	P	D	..	18	20	
J-36	W. M. Brown.......	D. Troutman	D	42	2	Tcl	...	20	1955	J	D	..	..	...	
J-37	Gerther L. Staples ..	Gene Robinson	D	31.4	1¼	Tcl	...	21.2	6-19-56	P	D	70	7	5	
J-38	Rob Rolin	Rob Rolin	D	37.3	1¼	Tcl	296	22.8	6-27-56	P	D,S	68	11	14	
J-39	....do..........	Etheridge Plumbing Co.	D	40	2	Tcl	...	....	......	J	D	..	..	...	Casing: 2-in. to 35 ft.; 2-in. screen from 35 to 40 ft. See driller's log.
J-40	Adam Daughtery....	....do..........	D	50	2	Tcl	297	48	1953	J	D,S	..	11	12	See driller's log.
J-41	Friendly Church....	R. M. McGhee.....	D	29.1	1¼	Tcl	...	22.0	6-27-56	P	D	68	11	8	
J-42	Noah McGhee......	Noah McGhee......	D	36.5	1¼	Tcl	295	24.7	6-19-56	P	D	68	11	4	
J-43	Jim Presley........	Rufus Bell.........	D	41	2	Tcl	...	35	1954	J	D	69	7	4	
J-44	George Montgomery .	....	D	45	2	Tcl	...	35	1952	J	D,S	69	11	6	Casing and screen: 2-in. to 45 ft.
J-45	E. M. Hall	E. M. Hall	D	25	1¼	Tcl	...	17	......	J	D,S	..	7	6	Casing and screen: 1¼-in. to 25 ft.
J-46	H. G. Agee	H. G. Agee	Dr	21	1¼	Tcl	...	14	1956	J	D	67	11	10	Casing and screen: 1¼-in. to 21 ft.
J-47	E. J. Hall.........	E. J. Hall.........	Dr	21	1¼	Tcl	...	15	1953	P	D,S	..	28	...	Casing and screen: 1¼-in. to 21 ft. Supplies 50 hogs and 40 cows.
J-48	S. H. Malone......	S. H. Malone......	D	34	1¼	Tcl	...	26	1953	J	D	67	11	8	
J-49	Episcopal Church ...	Dan McGhee.......	D	31.3	1¼	Tcl	296	24.6	6-29-56	P	D	69	11	9	
J-50	Alton Jackson......	E. McGhee	D	23.9	1¼	Tcl	...	16.9	7-18-56	P	D	71	14	12	
J-51	Tracy Rolin........	Elbert Rolin.......	D	15	1¼	Tcl	...	10	1954	P	D	69	14	10	

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (°F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
J-52	D. Z. Weaver		D	25	1¼	Tcl	...	17	1955	J	D,S	..	11	8	
J-53	Tracy Rolin	Etheridge Plumbing Co.	D	60	2	Tcl	306	....	......	J	D,S	71	11	8	Casing: 2-in. to 55 ft.; 2-in. screen from 55 to 60 ft. See driller's log.
J-54	Eugene Sells	do	D	60	2	Tcl	307	50	1951	J	D	72	11	8	Do.
J-55	Will McGhee	do	D	60	2	Tcl	306	50	1952	J	D	72	7	8	Do.
J-56	A. D. Martin	do	D	57	2	Tcl	294	....	......	J	D	71	11	6	Casing: 2-in. to 52 ft.; 2-in. screen from 52 to 57 ft. See driller's log.
J-57	Irvin Rhodes	Irvin Rhodes	B	40.1	10	Tcl	295	29.8	7-17-56	M	D	..	..	...	
J-58	Marshall Hall	Marshall Hall	D	57	2	Tcl	...	37	......	J	D	72	11	6	Casing and screen: 2-in. to 57 ft.
J-59	W. E. Hale		B	53.9	8	Tcl	297	36.3	7-17-56	M	D	..	..	...	
J-60	Mary Green		B	56.2	10	Tcl	299	36.0	7-17-56	M	D	..	..	...	
J-61	K. E. Green	K. E. Green	D	55	2	Tcl	300	....	......	J	D,S	71	11	10	Casing and screen: 2-in. to 55 ft.
J-62	J. H. Stephanus	Rufus Bell	D	38	2	Tcl	...	25	1953	J	D,S	..	..	...	Casing and screen: 2-in. to 38 ft.
J-63	W. E. James	Etheridge Plumbing Co.	J	113	2	Tcl	298	31	1956	J	D	70	7	19	See driller's log.
J-64	L. B. Williams	do	D	...	2	Tcl	298	....	......	J	D	..	7	10	
J-65	Raymond Banks	Raymond Banks	D	31.2	1¼	Tcl	...	26.0	6-28-56	P	D	69	21	7	
J-66	Sarah Hall		..	47	2	Tcl	...	39	1954	J	D,S	..	14	11	
J-67	Jane Landsey	Gene Robinson	D	30	1¼	Tcl	...	....	......	P	D	..	..	...	
J-68	James Lamar	James Lamar	D	27.8	1¼	Tcl	...	20.6	6-29-56	P	D	69	11	10	
J-69	I. H. Lamar	Etheridge Plumbing Co.	D	55	2	Tcl	...	24	1954	J	D	..	..	...	Casing: 2-in. to 50 ft.; 2-in. screen from 50 to 55 ft. See driller's log.
J-70	Hubert Laler	Gene Robinson	D	38	1¼	Tcl	...	30	......	P	D	69	11	8	Casing and screen: 1¼-in. to 38 ft.

K- 1	Atmore State Prison Farm.	Gray Artesian Well Co.	D	172	8	Tmu	318	118	......	T	P	..	..	...	Casing: 8-in. to 118 ft.; 8-in. screen from 118 to 172 ft. Reported yield 250 gpm. See driller's log for test well drilled to 176 ft.
K- 2	....do..........	Spillers Well and Pump Co.	D	...	..	Tmu (?)	...	....	......	..	P	..	..	...	
K- 3	W. J. Ross........	W. J. Ross........	D	80	2	Tci	...	65	......	J	D,S	..	7	12	Casing and screen: 2-in. to 80 ft.
K- 4	R. L. Roberts......	B. B. Booker.......	D	60	2	Tci	...	....	......	C	D,S	..	4	7	
K- 5	H. L. Ross........	....	B	60.2	8	Tci	317	49.4	5-15-56	M	D	..	..	...	
K- 6	M. O. Davis	M. O. Davis	B	40.5	8	Tci	309	33.1	5-16-57	..	N	..	..	...	
K- 7	....do..........	Etheridge Plumbing Co.	D	69	2	Tci	307	35	1952	J	D,S	70	7	9	See driller's log.
K- 8	Clyde Pursell......	....do..........	D	91	2	Tci	327	64	1956	J	D,S	71	7	9	Casing: 2-in. to 76 ft.; 2-in. screen from 76 to 91 ft. Cylinder at 73 ft. See driller's log.
K- 9	Lamar King........	Lamar King........	B	72.5	4	Tci	...	60.5	5-10-56	M	D	68	21	10	
K-10	Atmore State Prison Farm.	Etheridge Plumbing Co.	D	82	2	Tci	298	....	......	J	D	..	11	8	Casing: 2-in. to 77 ft.; 2-in. screen from 77 to 82 ft. See driller's log.
K-11	W. W. Vickery.....	....do..........	D	69	2	Tci	296	58	......	J	D	70	11	16	
K-12	....do..........	....	D	41.2	8	Tci	294	32.4	......	M	D	..	..	...	
K-13	C. W. McGhee.....	Etheridge Plumbing Co.	D	...	2	Tci	294	....	......	J	D,S	..	..	...	
K-14	Atmore State Prison Farm.	....	D	170	4	Tmu	294	....	......	T	S	..	11	17	Casing: 4-in. to 170 ft.
K-15	....do..........	....	D	74	2	Tci	...	56	......	J	D,S	..	7	9	Supplies 750 hogs.
K-16	Charles Conway....	Jim White.........	B	34.9	8	Tci	262	22.3	5-10-56	M	D,S	69	18	30	Supply inadequate during dry season.
K-17	Elisha Shank	Etheridge Plumbing Co.	D	83	2	Tci	267	50	1955	J	D	..	..	...	
*K-18	E. M. Terry.......	Rufus Bell.........	D	103	2	Tci	298	....	......	J	D,S	70	..	...	See driller's log.
K-19	J. F. Digman......	Etheridge Plumbing Co.	D	...	2	Tci	285	....	......	J	D,S	72	7	7	
K-20	J. C. Lufkin	....	D	64.3	4	Tci	283	37.4	6- 5-56	J	S	..	7	9	Supplies 3,000 chickens and 50 cattle.
K-21	Lula Jones........	W. R. Bell	D	55	2½	Tci	...	44	1950	J	D Ind	..	7	8	Casing and screen: 2½-in. to 55 ft.
K-22	A. W. Beasley.....	Rufus Bell.........	D	78.0	2	Tci	286	68.2	1-10-57	J	D,S	..	14	14	Casing and screen: 2-in. to 78 ft.
K-23	Z. C. Robinson	Etheridge Plumbing Co.	D	74	2	Tci	274	....	......	J	D,S	..	7	9	
K-24	J. E. Middleton....	B. B. Booker	D	100	2	Tci	...	85	......	Cy	D	..	7	6	

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as CaCO$_3$ (ppm)	
K-25	M. Lewis	Rufus Bell........	D	80	3	Tci	...	....	......	Cy	D	..	..	...	Water leaves red stain.
K-26	J. S. Owens.......	J. S. Owens.......	D	52	1½	Tci	...	41	1946	Cy	D, S	69	7	12	
K-27	T. S. Owens	T. S. Owens	D	95	2	Tci	...	75	......	Cy	D Ind	..	7	5	Casing and screen: 2-in. to 95 ft.
*L- 1	C. Smith.........	-- Hendrick.......	J	154	2	Tmu	...	120	1952	Cy	D, S	..	7	44	
L- 2	Chester Smith	....do..........	J	100	2	Tci	...	....	......	Cy	D	67	..	...	Casing and screen: 2-in. to 100 ft.
L- 3	Allen Smith	....do..........	J	67	2	Tci	...	....	......	Cy	D, S	..	..	...	
L- 4	E. Grissett	....	J	121	2	Tci	...	....	......	Cy	D, S	..	..	...	
L- 5	B. Coleman.......	....	B	43.1	8	Tci	...	35.1	2- 9-56	M	D, S	..	..	...	
L- 6	N. L. Coleman.....	-- Boggan	B	45.6	8	Tci	...	30.8	5-25-56	M	D	..	..	...	
L- 7	K. E. Cunningham ..	....	J	75	2	Tci	...	....	......	Cy	D, S	..	..	...	Casing and screen: 2-in. to 75 ft.
L- 8	J. B. Graham	Rufus Bell........	D	85	2	Tci	...	62	1953	Cy	D, S	..	..	...	Casing and screen: 2-in. to 85 ft.
L- 9	....do..........	....	B	40.6	8	Tci	...	36.6	3-27-56	M	N	..	..	...	
L-10	R. A. Hobbs	....	J	55	2	Tci	...	40	1946	J	D, S	..	..	...	
L-11	C. E. Hollanhead ...	-- Hendrick.......	J	50	2	Tci	...	....	......	J	D, S	..	..	...	
L-12	J. B. Byrd	Etheridge Plumbing Co.	D	...	..	Tci	309	....	......	J	D	..	..	...	
L-13	J. P. Booth.......	....do..........	D	85	2	Tci	314	60	1952	J	D, S	68	11	18	See driller's log.
L-14	J. W. Lee........	....do..........	J	70	2	Tci	313	54	1950	J	D	..	..	...	
L-15	Charles Booth	....	..	60	2	Tci	...	....	......	J	D	..	..	...	
L-16	F. A. Steward.....	....	B	19.1	8	Tci	...	18.8	3-27-56	M	D	..	..	...	
L-17	C. J. Peacock.....	-- Goddard	B	68.6	8	Tci	...	66.5	5-24-56	M	D	..	..	...	
L-18	H. C. Steward.....	....	Dr	38	1½	Tci	...	26	......	..	D, S	..	..	...	

L-19	Clyde Peacock	Clyde Peacock	B	59.5	10	Tci	...	42.0	5-27-56	M	D,S	..	..	...	
L-20	J. L. English	Etheridge Plumbing Co.	D	120	2	Tci	293	....	......	Cy	D,S	..	..	...	See driller's log.
L-21	....do	....	B	38.8	8	Tci	269	27.3	3-27-56	M	S	..	..	...	
L-22	W. H. Myrick	W. H. Myrick	B	70.2	8	Tci	...	64.4	3-27-56	M	D	..	..	...	
L-23	Pete Sellers	Etheridge Plumbing Co.	D	118	2	Tci	283	....	......	Cy	D,S	..	..	...	Do.
L-24	F. A. Steward	....do	B	74.8	8	Tci	283	66.2	3-28-56	M	D,S	69	7	10	
L-25	....do	....do	D	110	4	Tci	285	68.0	1956	T	D,S	..	11	6	Do.
L-26	....do	....do	D	110	2	Tci	285	....	......	Cy	D,S	..	..	...	Casing and screen: 2-in. to 110 ft.
L-27	H. Peacock	....	B	53.9	8	Tci	...	48.6	3-28-56	M	D	..	..	...	
L-28	A. B. Bell	Etheridge Plumbing Co.	D	85	2	Tci	273	....	......	J	D,S	..	..	...	See driller's log.
L-29	L. B. Moye	....do	J	73	2	Tci	266	....	......	J	D	..	..	...	Do.
L-30	E. Robertson	....	B	50.4	8	Tci	...	47.6	2- 8-56	M	D,S	68	11	19	
L-31	T. W. Miller	T. W. Miller	B	26.6	8	Tci	271	13.8	2-28-56	M	D,S	67	7	48	
L-32	C. W. Steward	-- Hendricks	D	60	2	Tci	...	....	......	J	D,S	..	..	...	Casing and screen: 2-in. to 60 ft.
L-33	William Conway	....	Du	63.5	18	Tmu	...	44.5	1-10-57	M	N	..	..	...	
L-34	E. L. Conway	Jim White	B	43.5	8	Tci	231	27.3	5-16-57	M	D	70	7	37	
L-35	Clifton Hobbs	....	B	26.7	8	Tci	...	20.3	5- 1-56	M	D	..	..	...	
L-36	Louis Robertson	....	B	37.0	..	Tci	...	17.6	2- 8-56	J	D,S	..	..	...	
L-37	C. M. Burkett	C. M. Burkett	Du	23.0	40	Tci	...	20.2	2- 8-56	M	D,S	..	..	...	
L-38	Lem Boutwell	Lem Boutwell	Du	53.4	8	Tci	...	52.2	2- 8-56	M	D,S	..	..	...	
L-39	W. M. Burkett	W. M. Burkett	Du	29.0	40	Tci	...	28.9	2- 8-56	M	D,S	..	..	...	
M- 1	R. W. Odom	....	B	18.6	8	Tmu	156	12.0	3- 2-55	P	D	65	4	18	
M- 2	....do	Etheridge Plumbing Co.	D	693	4	Tc Tb Tg Tm To Ty Tmb Tgo Tl	153	9.7	4-26-55	..	D,S	..	..	...	Casing: 4-in. to 206 ft. Originally drilled to depth of 410 ft., later deepened to 693 ft. Flowed when first drilled. See driller's log.
M- 3	H. A. Bell	H. A. Bell	D	65	2	Tci	...	....	......	Cy	D,S	..	0	4	
M- 4	J. B. Robinson	....	..	....	2	Tci	...	....	......	J	D	..	1	6	

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
M- 5	Calvin Morris	....	D	80	2	Tci	...	....	......	J	D	..	1	7	
M- 6	J. C. Bagwell	J. C. Bagwell	D	80	2	Tci	286	64	1945	J	D,S	..	13	20	Casing: 2-in. to 74 ft.; 2-in. screen from 74 to 80 ft.
M- 7	Archie Strength	Etheridge Plumbing Co.	D	60	2	Tci	272	50	1953	Cy	S	69	0	10	
M- 8	....do	....do	D	112	2	Tci	304	93	1953	Cy	S	69	0	8	
M- 9	....do	....do	D	110	2	Tci	309	85	1953	J	D	69	0	9	See driller's log.
M-10	B. F. Strength	....	D	85	2	Tci	...	73	1949	Cy	D,S	..	1	7	Casing: 2-in. to 80 ft.; 2-in. screen from 80 to 85 ft.
M-11	L. N. Miller	L. N. Miller	D	78	4	Tci	293	68	......	Cy	D,S	69	1	6	Casing: 4-in. to 74 ft.; 4-in. screen from 74 to 78 ft.
M-12	Frank Strength	J. C. Hendricks	D	120	2	Tci	...	80	1945	J	D,S	..	1	8	Casing: 2-in. to 115 ft.; 2-in. screen from 115 to 120 ft.
M-13	....do	....	D	65	..	Tci	...	50	1953	Cy	D,S	70	1	6	
M-14	N. E. Lee	N. E. Lee	D	93	2	Tci	...	....	......	..	D	..	1	8	Casing: 2-in. to 88 ft.; 2-in. screen from 88 to 93 ft.
M-15	H. M. Johnson	H. M. Johnson	B	66.9	9	Tci	293	63.7	8-22-55	M	D,S	69	1	11	
M-16	....do	....do	Du	30.6	33	Tci	293	26.6	8-22-55	M	S	..	..	...	
M-17	Kenneth George	....	D	100	2	Tci	300	86	......	Cy	D,S	70	2	8	Casing: 2-in. to 95 ft.; 2-in. screen from 95 to 100 ft.
M-18	Eugene Lee	....	D	...	..	Tci	...	....	......	Cy	D,S	..	0	4	
M-19	F. P. Pridgen	G. Hutto	D	92	2	Tci	...	81	1950	J	D,S	..	0	7	
M-20	A. V. Ward	-- Warrick	D	80	2	Tci	...	72	1953	J	D	..	2	7	
M-21	J. H. Hutto	J. H. Hutto	D	80	2	Tci	...	70	1952	J	D	72	1	7	
M-22	N. T. Johnson	-- Byrd.	D	88	2	Tci	...	78	1954	J	D	..	1	4	
M-23	J. C. Hutto	J. C. Hutto	D	80	2	Tci	...	....	......	Cy	D,S	..	1	4	
M-24	George Robertson	George Robertson	D	93	2	Tci	305	78	......	C	D,S	70	0	4	
M-25	Ber Odom	Etheridge Plumbing Co.	D	80	2	Tci	...	....	......	J	D,S	..	..	...	

M-26	W. R. Bagwell	W. R. Bagwell	D	93	2	Tci	. . .	74	1946	J	D,S	. .	1	11	Supplies 100 hogs and 20 cattle.
M-27	C. R. Murphy	C. Holland.	D	99	2	Tci	. . .	79	1954	C	S	68	0	7	
M-28	J. B. Godwin.	Etheridge Plumbing Co.	D	80	2	Tci	. . .	55	1951	C	D,S	. .	0	6	Casing: 2-in. to 75 ft.; 2-in. screen from 75 to 80 ft. See driller's log.
M-29	L. J. Dewberry . . .	J. B. Godwin	D	70	2	Tci	. . .	. . . .	. . . . . .	Cy	D,S	69	0	6	
M-30	E. E. Chance.	. . . .	. .	. . .	2	Tci	. . .	. . . .	. . . . . .	J	D,S	. .	1	7	
M-31	Otis Emmons	Etheridge Plumbing Co.	D	80	2	Tci	249	54	1955	J	D,S	. .	0	8	See driller's log.
M-32	E. E. Chance.	. . . .	. .	. . .	. .	Tci	. . .	. . . .	. . . . . .	P	D	69	2	9	
M-33	T. J. Godwin	Robbins-McGowin . . .	D	50	2	Tci	. . .	. . . .	. . . . . .	J	D,S	. .	0	7	
M-34	Buford Godwin	. . . .	. .	. . .	. .	Tmu	. . .	. . . .	. . . . . .	. .	D	. .	11	19	
M-35	W. W. Ingram	. . . .	. .	16	1¼	Qal	. . .	10	. . . . . .	J	D	. .	. .	. . .	
M-36	. . . .	. . . .	. .	. . .	1¼	Tmu (?)	115	+ 3.7	3- 2-55	F	N	68	3	73	Measured flow 1.0 gpm on 3-2-55. Well plugged just below surface.
M-37	S. R. Parker.	S. R. Parker	. .	20	1¼	Qal	. . .	. . . .	. . . . . .	P	D,S	. .	. .	. . .	
M-38	Edgar Strength	. . . .	. .	20.5	1¼	Tmu	. . .	16.9	9-21-55	P	D	. .	8	8	
M-39	Marshall Godwin. . .	Marshall Godwin. . . .	. .	24.3	. .	Tmu	. . .	10.3	9-21-55	P	D,S	. .	2	8	
M-40	T. J. Welsh.	-- Hendricks	D	90	. .	Tci	. . .	. . . .	. . . . . .	Cy	D	. .	0	8	
*M-41	Cyril Welsh	. . . .	D	232	4	Tci Tmu	241	75	1949	J	D,S	70	. .	. . .	Casing: 4-in. to 75 ft. and from 80 to 90 ft. and 100 to 215 ft.; 4-in. screen from 75 to 80 ft., 90 to 100 ft., and 215 to 232 ft.
M-42	E. Morris	. . . .	. .	22.7	1¼	Tci	227	20.1	9-22-55	P	D	70	16	24	
M-43	F. T. Lee	. . . .	D	85	3	Tci	. . .	. . . .	. . . . . .	Cy	D,S	. .	. .	. . .	
M-44	Fred Jones	. . . .	D	85	3	Tci	. . .	. . . .	. . . . . .	J	D	. .	4	8	Supply inadequate.
M-45	J. H. Byrd	Etheridge Plumbing Co.	D	70	. .	Tci	. . .	. . . .	. . . . . .	Cy	D,S	. .	.	. . .	
M-46	T. Boatwright	. . . .	J	89	2	Tci	. . .	. . . .	. . . . . .	Cy	D,S	. .	. .	. . .	
M-47	J. A. Bandorand. . .	B. B. Booker.	J	100	2	Tci	. . .	. . . .	. . . . . .	Cy	D,S	. .	. .	. . .	Casing and screen: 2-in. to 100 ft.
M-48	Charlie Howard . . .	. . . .	. .	. . .	2	Qal	. . .	. . . .	. . . . . .	. .	D,S	. .	. .	. . .	
M-49	Roy Hammoc	. . . .	D	125	2	Tmu	. . .	55	1947	Cy	D,S	69	2	28	
N- 1	C. C. Huxford	Albert Beasley	J	150	2	Tmu	. . .	135	1951	Cy	N	. .	. .	. . .	
N- 2	. . . . do	. . . .	B	33.1	7	Tci	261	28.7	7-14-55	M	D	68	8	8	
N- 3	C. C. Hammoc. . . .	. . . .	D	78	2	Tci	. . .	. . . .	. . . . . .	J	D,S	. .	1	4	
N- 4	D. E. Morris.	D. E. Morris.	D	65	2	Tci	. . .	. . . .	. . . . . .	Cy	D	70	0	4	Casing: 2-in. to 60 ft.; 2-in. screen from 60 to 65 ft.

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
N- 5	Emma Steele	E. L. Steele	B	27	1¼	Tci	. . .	. . . .	. . . . . .	Cy	D	68	2	10	Casing: 1¼-in. to 25 ft.; 1¼-in. screen from 25 to 27 ft.
N- 6	C. C. Huxford	. . . .	B	16.2	1¼	Tci	294	12.7	7-14-55	P	N	. .	. .	. . .	
N- 7	J. C. Sheek	Etheridge Plumbing Co.	D	95	4	Tmu	. . .	. . . .	. . . . . .	J	D,S	. .	. .	. . .	Casing: 4-in. to 85 ft.; 4-in. screen from 85 to 95 ft. See driller's log.
N- 8	George Washington .	G. Washington	D	94	2	Tmu	. . .	. . . .	. . . . . .	J	D,S	67	7	7	Casing and screen: 2-in. to 94 ft.
N- 9	E. Graves	. . . .	B	45	. .	Tci	. . .	41.3	11- 4-55	. .	D	67	1	7	
N-10	J. F. Johnson	J. F. Johnson, Jr. . .	B	40.2	. .	Tci	. . .	. . . .	. . . . . .	M	D	67	0	23	
N-11	W. N. Graves	John and Jack White .	D	112	2	Tci	. . .	. . . .	. . . . . .	J	D	. .	0	7	Casing: 2-in. to 107 ft.; 2-in. screen from 107 to 112 ft.
N-12	E. D. Trawick	. . . .	B	46.1	6	Tci	212	40.1	8-24-56	M	D	69	0	10	
N-13	J. S. Graves	J. S. Graves	D	58	. .	Tci	. . .	50	1951	J	D,S	. .	2	6	Deepened from 45 to 58 ft.
N-14	Ernest Graves	Palmer Green	D	65	2	Tci	. . .	41	1955	J	D	. .	2	5	
N-15	J. W. Graves	. . . .	B	47.7	8	Tci	200	43	1955	M	D	69	0	9	
N-16	. . . . do	Ervin Carnley	D	62	2	Tci	203	. . . .	. . . . . .	Cy	D	70	0	6	
N-17	Dewey Harrell	. . . .	. .	70	2	Tci	. . .	48	1954	J	D	. .	7	7	Test hole drilled to 100 ft.
N-18	Carl Chavers	Etheridge Plumbing Co.	D	50	2	Tci	215	. . . .	. . . . . .	J	D	. .	7	8	Casing: 2-in. to 45 ft.; 2-in. screen from 45 to 50 ft. See driller's log.
N-19	F. M. Chavers	. . . . do	D	270	2	Tmu	331	. . . .	. . . . . .	Cy	D,S	. .	7	15	Casing and screen: 2-in. to 270 ft. See driller's log.
N-20	Louis Byrd	O. W. Findley	D	58	2	Tci	. . .	41	1950	J	D,S	. .	7	7	
N-21	H. H. Hutchcraft . .	H. H. Hutchcraft . . .	B	40	2	Tci	205	20	1949	J	D	. .	7	8	Casing and screen: 2-in. to 40 ft.
N-22	Ervin Carnley	Ervin Carnley	D	85	2	Tci	217	50	1941	Cy	D,S	69	2	8	Casing: 2-in. to 80 ft.; 2-in. screen from 80 to 85 ft.
N-23	B. J. Blackmon . . .	Windham Pump Co . .	D	75	2	Tci	211	40	1955	J	D,S	. .	0	6	
N-24	B. S. Blackmon . . .	Ervin Carnley	D	74.5	2	Tci	229	54.1	8-24-55	C	D	69	3	10	Casing: 2-in. to 70 ft.; 2-in. screen from 70 to 74.5 ft. See driller's log.

N-25	William Blackmon. .	Etheridge Plumbing Co.	D	217	2	Tmu	260	. . . .	. . . . . .	Cy	D,S	. .	0	9	Casing: 2-in. to 212 ft.; 2-in. screen from 212 to 217 ft. See driller's log.
N-26	J. W. Phillips	Ervin Carnley	D	88	2	Tci	. . .	. . . .	. . . . . .	. .	D	. .	1	7	Deepened from 66 to 88 ft.
N-27	Robert Steele	. . . . do	D	100	. .	Tci	. . .	. . . .	. . . . . .	Cy	N	. .	4	42	
N-28	Annie Watson	Etheridge Plumbing Co.	D	131	2	Tci	242	110	1952	Cy	D,S	68	8	9	
N-29	W. J. Blackmon . . .	W. J. Blackmon	D	59	2	Tci	226	41	1948	J	D,S	. .	4	7	Casing: 2-in. to 54 ft.; 2-in. screen from 54 to 59 ft.
N-30	Roy Smith	Etheridge Plumbing Co.	D	80	. .	Tci	227	. . . .	. . . . . .	Cy	D	. .	0	4	Casing: 2-in. to 75 ft.; 2-in. screen from 75 to 80 ft. See driller's log.
N-31	Columbus Spear . . .	H. Bates and C. O'Farrell.	D	82	2	Tci	236	42	1955	J	D	. .	2	5	
N-32	Vera Howell.	-- Howell	. .	20	. .	Tci	. . .	18.3	11- 2-55	P	D	. .	1	9	
N-33	Calvin Byrd	Robbins-McGowin . . .	D	81	2	Tci	218	38	1955	J	D	. .	1	6	Casing: 2-in. to 76 ft.; 2-in. screen from 76 to 81 ft.
N-34	Colon Carnley	Ervin Carnley	D	48	2	Tci	. . .	30	1952	Cy	D	68	1	6	
N-35	Malcolm Brantley . .	Etheridge Plumbing Co.	D	55	2	Tci	216	. . . .	. . . . . .	J	D,S	. .	1	10	Casing and screen: 2-in. to 55 ft.
N-36	Morey Brantley . . .	. . . .	B	35	. .	Tci	. . .	22	1947	J	D	70	4	8	
N-37	. . . .	. . . .	. .	. . .	2	Tci	240	. . . .	. . . . . .	J	D	. .	. .	. . .	
N-38	P. H. Jernigan. . . .	O. W. Findley	D	84	2	Tci	256	69	1955	J	D	. .	0	8	Casing: 2-in. to 79 ft.; 2-in. screen from 79 to 84 ft.
N-39	J. E. Chavers	. . . .	B	72.0	8	Tci	252	64.9	3-30-55	M	D	68	1	6	
O- 1	H. R. Ogletree. . . .	O. W. Findley	D	73	2	Tmu	187	. . . .	. . . . . .	J	D,S	. .	6	18	Casing: 2-in. to 67 ft.; 2-in. screen from 67 to 73 ft.
O- 2	Alice Franklin	. . . . do	D	100	2	Tmu	. . .	32	1955	Cy	D	68	7	10	
O- 3	Mary Salter	. . . .	D	85	. .	Tmu	238	. . . .	. . . . . .	Cy	D	. .	. .	. . .	
O- 4	S. D. Hodge.	. . . .	. .	70	. .	Tmu	217	. . . .	. . . . . .	P	D	. .	0	10	
O- 5	J. P. Cheatham . . .	J. P. Cheatham	B	53.5	7	Tmu	228	31.0	3-30-56	M	D	68	. .	. . .	
O- 6	J. A. Morris	Albert Beasley	J	68	. .	Tmu	. . .	. . . .	. . . . . .	Cy	D	. .	. .	6	
O- 7	H. M. Smith	. . . .	D	. . .	2	Tmu	216	20	. . . . . .	J	D	. .	. .	. . .	Casing and screen: 2-in. to 70 ft.
O- 8	Exriah Salter	O. W. Findley	D	45	2	Tmu	209	. . . .	. . . . . .	J	D,S	. .	. .	. . .	Casing: 2-in. to 40 ft.; 2-in. screen from 40 to 45 ft.
O- 9	F. L. Milligan	Albert Beasley	D	70	2	Tmu	203	. . . .	. . . . . .	J	D	. .	. .	. . .	
O-10	Ellen Nichols	C. O'Farrell	D	18.7	1¼	Tmu	182	10.7	3-21-56	P	D	65	. .	9	

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as CaCO$_3$ (ppm)	
O-11	White Horse Inn . . .	Marcus Blair	D	146	4	Tmu	180	40	1954	J	D	. .	. .	111	Casing: 4-in. to 143 ft.; 3-in. slotted casing from 143 to 146 ft.
O-12	. . . .	. . . .	. .	17.4	1¼	Tmu	210	8.9	3-19-56	P	D	. .	. .	. . .	
O-13	J. L. Roberts	Etheridge Plumbing Co.	D	342	4	Tc Tb Tg Tm To	205	58.4	4-15-57	. .	D	. .	. .	. . .	Casing: 4-in. to 193 ft.; none below.
O-14	George W. Weaver .	O. W. Findley	D	62	2	Tmu	. . .	32	1954	J	D,S	. .	. .	9	Casing and screen: 2-in. to 62 ft.
O-15	E. Smith	Marcus Blair	D	340	4,3	Tg Tm To	183	30	1954	J	D	. .	2	124	
O-16	R. B. Hawk	Gray Artesian Well Co.	D	179.0	4	Tmu	213	81.5	8- 8-55	. .	N	. .	0	80	Casing: 4-in. to 185 ft.; 4-in. screen from 185 to 205 ft. See driller's log for test well drilled to 212 ft. Well abandoned 8-8-55.
*O-17	. . . . do	Marcus Blair	D	246	4	Tc	226	91.3	8- 8-55	T	D	71	. .	. . .	Casing: 4-in. to 225 ft.; none below. See driller's log.
O-18	H. E. Long	. . . . do	D	430	4,3	Tg Tm To	241	. . . .	. . . . . .	T	D,S	71	. .	164	Casing: 4-in. to 234 ft.; 3-in. from 229 to 340 ft.; none below. See driller's log.
O-19	A. J. Singleton. . . .	Fred Danzler	D	19.5	2	Qal	137	11.7	5-13-55	J	D,S	67	. .	6	
O-20	H. W. Clayton	. . . .	Dr	24	1¼	Tmu	. . .	. . . .	. . . . . .	C	D,S	. .	0	6	Casing: 1¼-in. to 21.5 ft.; 1¼-in. screen from 21.5 to 24 ft.
*O-21	J. M. Brewer	O. W. Findley	D	65	2	Tmu	110	+ 3.6	10-31-56	F	D	68	. .	. . .	Casing: 2-in. to 62 ft.; 2-in. screen from 62 to 65 ft. Measured flow 0.4 gpm on 1-4-55.
O-22	E. D. Chavers	Robbins-McGowin . . .	D	81	2	Tmu	. . .	12	1-26-55	. .	D,S	. .	1	84	Casing and screen: 2-in. to 81 ft.
O-23	Amos D. Wilson . . .	. . . . do	D	28	2	Tmu	138	7.9	5-13-55	C	D,S	66	8	9	Casing: 2-in. to 18 ft.; 2-in. screen from 18 to 28 ft.
O-24	Lewis C. Barnett . .	O. W. Findley	D	101	7,2	Tmu	. . .	40	1952	Cy	D	. .	1	22	Casing: 2-in. to 95 ft.; 2-in. screen from 95 to 101 ft.
O-25	James H. Martin . .	. . . .	Du	27.0	36	Tmu	150	8.7	5-13-55	M	N	. .	. .	. . .	
O-26	. . . . do	James H. Martin . . .	Dr	28	1¼	Tmu	. . .	18	1952	C	D,S	. .	1	5	Casing and screen: 1¼-in. to 28 ft.

O-27	S. R. McGugan. . . .	Elbert McGugan	B	. . .	1¼	Tmu	. . .	. . . .	. . . . . .	. .	D,S	67	0	22	
O-28	Lon McGaha.	O. W. Findley	D	100	2	Tmu	. . .	87	1951	J	D	. .	2	15	Casing and screen: 2-in. to 100 ft.
O-29	Sabbie Singleton . . .	A. J. Singleton.	B	13.0	1¼	Tmu	137	7.4	6- 9-55	P	N	. .	. .	. . .	
O-30	Mary Johnson.	. . . .	D	100	2	Tmu	. . .	. . . .	. . . . . .	J	D,S	. .	1	92	Do.
O-31	. . . .	. . . .	. .	12.7	1¼	Qal	117	4.9	6- 9-55	P	N	. .	. .	. . .	
O-32	. . . .	. . . .	B	21.0	7	Qal	115	14.1	6- 9-55	M	D	69	2	8	
O-33	J. Blackmon	. . . .	D	25	2½	Qal	. . .	. . . .	. . . . . .	P	D,S	. .	. .	. . .	
O-34	. . . . do	. . . .	. .	30	2½	Qal	. . .	. . . .	. . . . . .	P	D	. .	. .	. . .	
O-35	T. Drew McCall . . .	. . . .	B	40.2	7	Tmu	170	37.2	6-13-55	M	D,S	68	1	6	
O-36	J. C. Cates	. . . .	B	41.1	7	Tmu	167	39.6	6-13-55	M	N	. .	. .	. . .	
O-37	Willie Pugh	J. C. Cates	Dr	18.3	1¼	Tmu	125	8.7	6-13-55	P	D,S	66	2	6	
O-38	Carl Smith.	Ernest James.	B	51.4	7	Tmu	172	47.0	6-13-55	M	D	68	1	8	
O-39	J. C. Myrick	O. W. Findley	D	58	2	Tmu	. . .	40	1954	Cy	D	68	0	5	Casing: 2-in. to 52 ft.; 2-in. screen from 52 to 58 ft.
O-40	W. G. Graves	. . . .	Dr	. . .	1¼	Tmu	. . .	. . . .	. . . . . .	. .	D	. .	1	6	
O-41	F. Downing	E. Steele.	Dr	20	1¼	Tmu	. . .	. . . .	. . . . . .	C	D	. .	0	9	Casing: 1¼-in. to 17 ft.; 1¼-in. screen from 17 to 20 ft.
O-42	D. B. Carter	C. O'Farrell	D	33	6, 1¼	Tmu	151	20	1946	P	D	67	2	5	
O-43	Paul Barrow	. . . .	B	28.9	7	Tmu	151	22.4	5-13-55	M	D	66	9	7	
O-44	C. R. Smith.	. . . .	. .	. . .	. .	Tmu	. . .	. . . .	. . . . . .	J	D	69	13	16	
O-45	J. B. C. Smith. . . .	-- Barrentine.	D	65	2	Tmu	. . .	30	1955	Cy	D	. .	1	8	Casing: 2-in. to 60 ft.; 2-in. screen from 60 to 65 ft.
O-46	O. K. Davis.	O. W. Findley	D	45	2	Tmu	135	11.8	5-12-55	C	D,S	. .	1	9	
O-47	Ila Quinn	George Rodgers	B	28.6	6, 1¼	Qt	135	14.3	5-12-55	P	D	68	2	8	
O-48	Marcus Jordon	Marcus Blair	D	194	4	Tc	. . .	51.0	4-10-57	T	D	68	0	142	Casing: 4-in. to 190 ft.; none below.
O-49	. . . .	. . . .	. .	. . .	2	Tmu	. . .	. . . .	. . . . . .	Cy	D	. .	1	9	
O-50	Leon F. Smith	O. W. Findley	D	72	2	Tmu	. . .	38	1949	J	D	. .	1	10	Casing and screen: 2-in. to 72 ft. Water contains iron.
O-51	E. E. Smith.	Jack and John White .	D	72	2	Tmu	. . .	40	1940	J	D,S	. .	2	9	Casing: 2-in. to 66 ft.; 2-in. screen from 66 to 72 ft.
O-52	Claude Smith	O. W. Findley	D	70	2	Tmu	. . .	18	1954	J	D,S	. .	2	8	Casing: 2-in. to 64 ft.; 2-in. screen from 64 to 70 ft.
O-53	W. A. Lovelace . . .	Marcus Blair	D	256	4	Tc	200	73	1953	Cy	D	. .	0	114	Casing: 4-in. to 242 ft.; none below.

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
O-54	Bert Rodgers.	Jack and John White .	J	79	2	Tmu	205	44	1954	J	D	. .	. .	. . .	
O-55	North Brewton Baptist Church.	Flo Drilling Co.	D	240	4	Tc	200	75.0	12- 6-56	Cy	D	67	11	126	Casing: 4-in. to 203 ft.; none below. See driller's log.
O-56	Robert W. Weaver .	Robbins-McGowin. . .	D	115	2	Tmu	. . .	. . . .	. . . . . .	J	D,S	. .	. .	. . .	Casing: 2-in. to 110 ft.; 2-in. screen from 110 to 115 ft.
O-57	. . . . do	. . . . do	D	90	2	Tmu	. . .	42	1950	J	D	68	7	8	
O-58	J. L. Hinson	. . . .	D	. . .	2	Tmu	. . .	. . . .	. . . . . .	J	D	. .	0	5	
O-59	R. B. Pittman	-- Wooten	D	212	2½	Tc	194	67.2	5-15-57	. .	N	. .	. .	. . .	Observation well. Casing: 2½-in. to 207 ft.; none below.
O-60	T. M. Mason	. . . .	. .	60.2	4	Tmu	191	. . . .	. . . . . .	. .	N	. .	. .	. . .	
O-61	Claude Kent	H. Bates and C. O'Farrell.	D	128	2	Tmu	. . .	22	1956	J	D	. .	. .	. . .	Casing: 2-in. to 123 ft.; 2-in. screen from 123 to 128 ft.
O-62	A. A. Waters.	A. A. Waters.	D	22.8	1¼	Tmu	187	16.3	3-16-56	P	D,S	67	25	67	
O-63	Sam Parker	Jack and John White .	D	101	2	Tmu	. . .	71	1956	J	S	. .	. .	. . .	Casing: 2-in. to 96 ft.; 2-in. screen from 96 to 101 ft.
O-64	A. B. Crook	C. O'Farrell	B	33.0	8	Tmu	209	25.8	6-16-55	M	D,S	68	14	29	
O-65	Earl Moran	. . . .	B	34.9	7	Tmu	205	26.7	6-16-55	M	N	68	47	14	
O-66	T. E. Watson.	C. O'Farrell	B	26.3	8	Tmu	195	16.2	6-16-55	P	D	. .	. .	. . .	
O-67	T. E. Watson.	O. W. Findley	D	94	2½	Tmu	. . .	70	1953	J	D,S	. .	6	48	Casing: 2½-in. to 91.5 ft.; 2-in. screen from 91.5 to 94 ft.
O-68	. . . . do	C. O'Farrell	B	25	2	Qt	188	10.6	6-16-55	C	S	. .	6	8	
O-69	Cleve Waters.	Cleve Waters.	D	27	2	Qt	. . .	17	1954	J	D,S	66	11	11	Casing: 2-in. to 22 ft.; 2-in. screen from 22 to 27 ft.
O-70	T. E. Watson.	C. O'Farrell	B	15.3	8, 1¼	Qt	172	5.1	6-16-55	P	D	69	23	14	
O-71	Marcus Jordan. . . .	Etheridge Plumbing Co.	D	156	2	Tmu	174	. . . .	. . . . . .	J	D,S	. .	11	41	See driller's log.
O-72	Sam Hart.	. . . .	B	. . .	7	Qt	. . .	26.6	3-16-56	M	D	. .	. .	. . .	
O-73	T. R. Miller Co. . .	. . . .	D	330.0	2½	Tm Tc	117	+ 18.8	6-23-55	F	N	71	6	147	Casing: 2½-in. to 260 ft.; none below. Measured flow 6.6 gpm on 6-22-55. Electric log in files of U.S. Geol. Survey.

O-74	Virgil Spivey	H. Bates and C. O'Farrell.	D	57	2	Tmu	...	6	1956	J	D	..	..	...	Casing: 2-in. to 52 ft.; 2-in. screen from 52 to 57 ft.
O-75	U.S. Experiment Station.	Marcus Blair	D	400	3	Tg Tm To	173	....	......	J	D,S	..	..	...	Casing: 3-in. to 310 ft.; none below.
O-76	C. O. Waters	Flo Drilling Co.	D	183	4	Tc	175	48.4	1- 5-57	J	D,S	69	11	176	Casing: 4-in. to 180 ft.; none below. Drawdown 7.6 ft. after 4 hours pumping 20 gpm on 1-5-57. See driller's log.
O-77	O. M. Gordon	....	D	690	4	...	152	....	......	..	N	..	..	...	
O-78	Arthur Waterman	-- Wooten	D	219	..	Tc	174	50	1928	Cy	D	..	0	112	
O-79	Oscar Skinner	Marcus Blair	D	600	4	Tg Tm To Ty Tmb Tgo	165	45.8	5-25-55	J	D	74	1	150	Casing: 4-in. to 320 ft.; none below. Electric log in files of U.S. Geol. Survey.
O-80	Linn Rodrick	C. O'Farrell	B	23.4	7	Qt	175	19.8	5-12-55	M	D	67	13	22	
O-81	R. T. Weaver	....	D	75	2	Tmu	...	....	......	Cy	D	68	0	5	
O-82	S. L. Smith	Etheridge Plumbing Co.	D	163	2	Tmu	162	100	1955	J	D	..	0	6	See driller's log.
O-83	L. B. Robinson	....	..	70	2	Tmu	122	....	......	Cy	D	65	0	88	
O-84	....do	Jack and John White	J	50	2	Tmu	118	15	1947	Cy	D,S	..	2	8	
*O-85	....do	Marcus Blair	D	700	4,2	Tg Tm To Ty Tmb Tgo Tl	135	+ 9.5	1-25-55	F	D,S	75	..	...	Casing: 4-in. to 323 ft.; not cased from 323 to 511 ft.; 2-in. from 511 to 700 ft.; slotted from 657 to 679 ft. Measured flow 25.0 gpm on 1-26-55. Electric log in files of U.S. Geol. Survey.
O-86	Hunter Sherrer	....do	D	650	4,2	Tg Tm To Ty Tmb Tgo Tl	127	....	......	F	D	75	14	142	Casing: 4-in. to 300 ft.; not cased from 300 to 460 ft.; 2-in. from 460 to 629 ft.; slotted casing from 629 to 650 ft. Estimated flow 60 gpm. See driller's log.
O-87	C. C. Huxford	....	..	...	2	Tmu	151	....	......	J	D	..	0	6	
O-88	D. S. Robertson	O. W. Findley	J	67	2	Tmu	163	....	......	J	D	..	2	8	
O-89	D. P. Liles	Flo Drilling Co.	D	103	2	Tmu	206	....	......	P	D	..	..	...	Casing: 2-in. to 98 ft.; 2-in. screen from 98 to 103 ft. See driller's log of test hole drilled to 108 ft.
O-90	James Bennett	H. Bates	D	117	2	Tmu	...	....	......	Cy	D	..	..	...	Casing: 2-in. to 112 ft.; 2-in. screen from 112 to 117 ft.
O-91	Noah Long	....	J	91	2½	Tmu	...	54	1956	Cy	D,S	..	7	12	

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level: Above (+) or below land surface (feet)	Water level: Date of measurement	Method of lift	Use of water	Field determinations: Temperature (° F)	Field determinations: Chloride (Cl) (ppm)	Field determinations: Hardness as CaCO3 (ppm)	Remarks
O-92	Sam Cunningham. . .	Flo Drilling Co.	D	63	2	Tcl (?)	182	. . . .	. . . . . .	J	D,S	. .	11	60	
O-93	Flourney Lovelace .	. . . . do	D	400.0	4	Tg Tm To	131	16.2	12-14-56	J	D	. .	11	146	Casing: 4-in. to 333 ft.; none below. See driller's log.
O-94	. . . .	. . . . do	D	133	. .	Tmu	. . .	. . . .	. . . . . .	. .	D	. .	. .	. . .	
O-95	City of Brewton . . .	Layne-Central Co. . .	D	661	16, 10	Tl	151	22.5	2- 3-57	T	P	. .	2	110	Owner's well 4. Casing: 16-in. to 512 ft.; 10-in. from 452 to 517 ft., 537 to 560 ft., and 590 to 614 ft.; 10-in. screen from 517 to 537 ft., 560 to 590 ft., and 641 to 661 ft. Length of air line is 228 ft. Reported yield 615 gpm. See driller's log of test well drilled to a depth of 696 ft.
O-96	Pure Creamery . . .	. . . .	D	500	. .	. . .	125	0	11- 1-54	T	Ind	. .	. .	. . .	
O-97	. . . . do	. . . .	D	622.0	4	Tl	125	+ 4.6	1- 3-55	F	N	. .	0	108	Casing: 4-in. to 602 ft.; none below. Measured flow 4.7 gpm on 11-1-54. Electric log in files of U.S. Geol. Survey.
O-98	T. R. Miller Co. . .	. . . .	. .	17.2	1¼	Tmu	163	10.9	6-20-55	P	S	67	16	14	
O-99	Fred James	Fred James	D	36	2	Tmu	. . .	18	1955	. .	D,S	. .	1	6	
O-100	. . . . do	C. O'Farrell	B	25.8	7	Tmu	193	20.5	6-20-55	M	N	. .	. .	. . .	
O-101	C. L. Dolohite	Flo Drilling Co.	D	53	2	Tmu	207	35	1956	. .	D	. .	. .	. . .	Casing: 2-in. to 48 ft.; 2-in. screen from 48 to 53 ft. Test hole drilled to depth of 191 ft.
O-102	James Lanier.	C. O'Farrell	B	16.7	8	Tmu	218	8.1	6-20-55	C	D,S	. .	8	5	
O-103	Willie J. Andrews. .	W. J. Andrews.	B	25	1¼	Tmu	. . .	20	1952	. .	D	70	6	25	
O-104	H. E. C. Barnett . .	Jessie Raines.	D	50	2	Tmu	. . .	32	1951	J	D,S	. .	1	6	Casing: 2-in. to 44 ft.; 2-in. screen from 44 to 50 ft.
O-105	Isaac House	J. O. O'Farrell	B	30.0	7	Tmu	237	16.4	6-23-55	P	D	. .	. .	. . .	See driller's log of test hole drilled to depth of 260 ft.
O-106	. . . . do	. . . .	D	85.7	2	Tmu	237	74.8	6-23-55	. .	N	. .	. .	. . .	
O-107	Sam Johns	Etheridge Plumbing Co.	D	160	. .	Tmu	237	. . . .	. . . . . .	Cy	D	. .	4	24	

O-108	Ala. Div. of Forestry.	....	D	560	2, 1	Tg Tm To	250	195	1955	Cy	D	69	2	156	
O-109	Archie Hale......	H. Bates..........	D	53	2	Tmu	...	31	1952	Cy	D	..	..	...	
*O-110	Collins Johnson ...	Etheridge Plumbing Co.	D	150	2	Tmu	193	70	1955	Cy	D	..	..	...	See driller's log.
O-111	T. R. Miller Co...	Marcus Blair......	D	650	4	Tg Tm To Ty Tmb Tgo Tl	86	....	......	F	Ind	..	..	...	Casing: 4-in. to 263 ft.; none below. Measured flow 205 gpm on 2-22-57. See driller's log.
O-112	....do........	-- Wooten........	D	...	4	...	81	....	......	F	Ind	71	0	122	Measured flow 2.6 gpm on 10-22-54.
O-113	....do........	....do..........	D	...	4	...	81	....	......	F	N	74	0	28	Measured flow 1.8 gpm on 10-27-54.
O-114	....do........	....do..........	D	...	4	...	81	+ 3.0	10-25-54	F	N	70	0	82	Flow less than 1 gpm on 10-27-54.
O-115	....do........	....	Dr	8	2	Qal	83	2	1947	..	D	..	..	...	
O-116	....do........	....	D	...	..	...	72	+ 18.4	1-15-55	F	N	70	0	112	Measured flow 6.5 gpm on 10-20-54.
O-117	....do........	....	D	...	..	...	76	....	......	F	N	70	0	116	Measured flow 1.9 gpm on 10-20-54.
O-118	Berthea McCaskill .	Joe McCaskill	D	100	1½	Tmu	80	+ 3.2	1-15-55	F	D	68	0	14	Measured flow 1.0 gpm on 1-15-55.
O-119	Clarence Harvey...	....	..	...	4	...	79	....	......	F	D	..	0	14	Measured flow 4.3 gpm on 11-3-54.
O-120	T. R. Miller Co...	-- Wooten........	D	700	4	...	80	....	......	F	Ind	75	..	...	
O-121	....do........	....do..........	D	700	4	...	80	....	......	F	Ind	75	..	...	
O-122	....do........	....do..........	D	700	4	Tm To Ty Tmb Tgo Tl	80	....	......	F	Ind	75	0	114	Electric log in files of U.S. Geol. Survey.
O-123	....do........	....	..	...	..	...	79	....	......	F	...	71	..	...	Flow less than 1 gpm on 10-25-54.
O-124	....do........	....	D	620	5	...	80	+ 29.3	4- 4-57	F	Ind	76	..	...	Measured flow 75.0 gpm on 4-4-57.
O-125	....do........	....	D	253.5	5	...	80	+ 27.0	4- 4-57	F	Ind	76	0	114	Measured flow 65.0 gpm on 4-4-57.
O-126	Bob Owens.......	Walter Malone.....	D	190	1½	Tb	79	+ 9.2	1-15-55	F	D	68	0	124	Measured flow 2.1 gpm on 10-28-54.
O-127	J. B. Byrd......	Marcus Blair......	D	675	4	Tg Tm To Ty Tmb Tgo Tl	79	+ 46.2	1952	F	Ind	70	..	...	Casing: 4-in. to 280 ft.; none below. Reported flow 250 gpm.
O-128	C. B. Garrett	Walter Malone.....	D	...	1½	...	76	....	......	F	D	..	0	126	Measured flow 1.0 gpm on 10-25-54.

Table 4.–*Records of wells in Escambia County, Ala.*–Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
*O-129	Brewton Iron Works	Etheridge Plumbing Co.	D	233	4	Tc Tb	79	+ 7.1	5- 2-55	F	Ind	68	. .	. . .	Casing: 4-in. to 138 ft.; none below. Measured flow 6.0 gpm on 5-2-55. See driller's log.
O-130	Robbins-McGowin . .	Morris Watson	J	190	2½	Tb	79	+ 4.7	1-14-54	F	N	70	0	126	Measured flow 1.5 gpm on 10-25-54.
O-131	R. M. Jernigan . . .	. . . .	D	. . .	3½	. . .	81	+ 15	1954	F	Ind	. .	0	94	
O-132	City of Brewton . . .	Marcus Blair	D	700	4	Tg Tm To Ty Tmb Tgo Tl	95	. . . .	. . . . . .	F	D	. .	14	114	Casing: 4-in. to 300 ft.; none below.
O-133	J. D. Leigh	. . . .	D	300	1½	. . .	. . .	+ 14.0	12- 8-54	F	D	69	. .	. . .	Measured flow 2.2 gpm on 12-8-54.
O-134	S. F. Parker	. . . .	. .	63.5	1½	Tmu	90	+ 1.0	11- 5-54	F	N	. .	. .	. . .	
O-135	C. P. Holman	. . . .	. .	. . .	. .	. . .	90	. . . .	. . . . . .	F	D	. .	0	110	Measured flow 3.2 gpm on 11-3-54.
O-136	Mattie O'Bannon . . .	-- Wooten	D	890	4	. . .	106	. . . .	. . . . . .	F	. .	. .	0	108	
O-137	Earl Wilson	. . . . do	D	700	3	. . .	109	+ 5.3	1-15-55	F	D	69	0	102	Estimated flow 30 gpm on 11-2-54.
O-138	E. L. McMillan . . .	. . . .	D	559	2	Tg Tm To Ty Tmb Tgo Tl	113	+ 5.0	1-28-55	F	D	72	2	110	Casing: 2-in. to 305 ft.; none below. Measured flow 6.3 gpm on 1-28-55. Electric log in files of U.S. Geol. Survey.
O-139	Adrian P. Downing .	. . . .	D	900	. .	. . .	118	+ 7.1	1-13-55	F	N	75	0	106	
O-140	City of Brewton . . .	Gray Artesian Well Co.	D	617.0	10	Tl	118	+ 8	12- -54	F, T	P	75	11	102	Owner's well 2. Casing: 10-in. to 577 ft.; none below. Measured flow 71.0 gpm on 7-27-55. Electric log in files of U.S. Geol. Survey.
*O-141	. . . . do	Gulf Oil Co	D	650	6	Tl	90	+ 35.4	4- 3-57	F	P	75	. .	. . .	Owner's well 6. Casing: 6-in. to 650 ft.; perforated from 590 to 620 ft. Measured flow 56.3 gpm on 4-8-57. Electric log of test hole drilled to depth of 1,440 ft. in files of U.S. Geol. Survey.
O-142	T. Fay	. . . .	D	476.0	2½	. . .	. . .	. . . .	7-20-54	F	Ind	75	7	132	Measured flow 33.0 gpm on 7-20-54.
O-143	. . . . do	. . . .	D	675	4	. . .	. . .	+ 10.2	7-20-54	F	Ind	74	7	113	Measured flow 9.9 gpm on 7-20-54.

O-144	. . . . do	. . . .	D	675	2	. . . .	. . .	. . . .	. . . . . .	F	Ind	72	8	126	Measured flow 1.5 gpm on 7-20-54.
O-145	Tom and Ed Bridges	-- Wooten	D	190	. .	Tb	77	. . . .	. . . . . .	F	D	69	. .	. . .	Measured flow 5.0 gpm on 1-7-57.
*O-146	City of Brewton . . .	A. Kimbrough	D	940	12, 4	Tl (?)	77	+ 11.2	1-13-55	F	N	69	. .	. . .	Owner's well 1. Casing: 12- and 4-in. to 577 ft. Measured flow 6.1 gpm on 1-13-55. See driller's log. Formerly used as public supply.
O-147	. . . . do	M. H. Holland	D	596.0	6, 4	Tl	77	+ 46.0	8- 8-55	F	Ind	74	0	92	Owner's well 3. Casing: 6- and 4-in. to 576 ft.; none below. Measured flow 180.0 gpm on 3-4-57. Electric log in files of U.S. Geol. Survey.
O-148	Sherrer Machine Shop.	. . . .	. .	. . .	2½	. . .	. . .	+ 8.0	1-27-55	F	Ind	66	2	130	
O-149	. . . .	. . . .	. .	. . .	1½	. . .	77	+ 10.7	11-13-55	F	N	68	0	128	Measured flow 2.5 gpm on 10-27-54.
*O-150	City of Brewton . . .	Layne-Central Co. . .	D	731	16, 10	Tl	155	32.1	4-25-57	F, T	P	76	. .	. . .	Owner's well 5. Casing: 16-in. to 596 ft.; 10-in. from 596 to 600 ft., and 650 to 691 ft.; 10-in. screen from 600 to 650 ft., and 691 to 731 ft. Electric log in files of U.S. Geol. Survey. Measured drawdown 147.5 ft. when pumped 787 gpm for 16.6 hours in April 1957. See driller's log of test hole drilled to depth of 1,018 ft.
O-151	Clyde F. O'Bannon, Jr.	Etheridge Plumbing Co.	D	63	2	Tmu	. . .	. . . .	. . . . . .	J	D, S	. .	6	9	See driller's log.
O-152	Thomas Lewis	H. Bates	D	33	2	Tmu	. . .	. . . .	. . . . . .	J	D	69	15	28	Measured yield 7.5 gpm on 3-8-57.
O-153	Jack Werline	. . . .	D	100	2	Tmu	. . .	. . . .	. . . . . .	Cy	D	. .	0	5	
O-154	Escambia County Board of Education	. . . .	D	22.7	2	Tci	203	18.9	6-14-55	P	D, P	69	1	7	
O-155	Susie Preyer	O. W. Findley	D	40	2½	Tmu	. . .	. . . .	. . . . . .	C	D	. .	. .	. . .	
O-156	Ira Lee Russell . . .	Flo Drilling Co.	D	54	2	Tmu	. . .	. . . .	. . . . . .	J	D	. .	. .	. . .	
O-157	Lillie O'Bannon . . .	O. W. Findley	D	53	6, 2	Tmu	. . .	. . . .	. . . . . .	J	D	. .	0	6	
O-158	Escambia County Poor House.	. . . .	B	60	8, 2	Tmu	. . .	. . . .	. . . . . .	Cy	D	. .	2	4	
O-159	A. Stewart O'Bannon	Etheridge Plumbing Co.	D	170	2	Tmu	163	. . . .	. . . . . .	Cy	D	. .	0	32	See driller's log.
O-160	Jim Gibson	. . . .	Dr	23.6	1	Tmu	186	18.6	2- 1-55	P	N	. .	. .	. . .	
O-161	. . . . do	Etheridge Plumbing Co.	D	260	2	Tmu	186	92.0	2- 1-55	J	D, S	. .	2	86	Casing: 2-in. to 250 ft.; 2-in. screen from 250 to 260 ft. Electric log in files of U.S. Geol. Survey. See driller's log.
*O-162	Southern Pine Coop. Assoc.	Layne-Central Co. . .	D	220.0	10, 8	Tmu	135	46	4- -51	T	Ind	. .	. .	. . .	Casing: 10-in. to 18 ft.; 8-in. from 18 to 177 ft.; 6-in. screen from 177 to 217 ft.; none below. Reported drawdown 24 ft. after 8 hours pumping 100 gpm on 4-1-51. See driller's log.
O-163	E. Fuqua.	. . . .	. .	. . .	. .	. . .	83	. . . .	11- 2-54	F	D	. .	0	108	Measured flow 2.6 gpm on 11-2-54.
O-164	J. W. Harris	-- Wooten	D	390	2½	. . .	. . .	+ 12.0	1-27-55	F	Ind	69	2	118	Casing: 2½-in. to 80 ft.; none below. Measured flow 10.0 gpm on 1-27-55.

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as CaCO3 (ppm)	
O-165	Lynn Oil Co.	...	D	...	2	...	77	+ 20.2	1- 4-55	F	D	75	..	...	Measured flow 6.5 gpm on 11-11-54.
O-166	Howard W. Thompson.	-- Wooten	D	...	..	...	...	+ 10	1- -55	F	D	..	..	...	
O-167	Ruth Sowell	...	..	...	1½	...	...	+ 4	1- -55	F	D	67	2	76	
O-168	W. S. Crenshaw	-- Wooten	D	435	2	...	...	+ 10	1- -55	F, C	D	..	2	118	Casing: 2-in. to 318 ft.; none below. Supplies several houses.
O-169	Barney Thompson	...	..	...	1½	...	...	+ 9.0	1-31-55	F	D	69	2	114	Measured flow 2.5 gpm on 1-31-55.
O-170	Addie McGowin	-- Wooten	D	636	4	...	103	....	11-10-54	F	D	..	0	108	
O-171	B. D. Dozier	-- Wooten	D	425	2	...	106	....	......	..	N	..	..	...	Formerly flowed.
O-172	Frank Ashton	....do	D	420	3	...	103	+ 4.5	1-13-55	F	D	73	0	110	Measured flow 1.3 gpm on 11-11-54.
O-173	Clem Linton.	...	..	...	2	...	102	+ 5.9	11-17-54	F	S	..	0	114	Flow less than 1 gpm on 11-17-54.
*O-174	City of East Brewton	Layne-Central Co.	D	709.0	10, 8, 6	Tl	158	31.0	5- 6-57	T	P	76	..	...	Casing: 10-in. to 17 ft.; 8-in. from 17 to 615.6 ft.; 6-in. from 607.5 to 618 ft., and from 638 to 679 ft.; 6-in. screen from 618 to 638 ft., and 679 to 709 ft. Reported drawdown 84 ft. after pumping 388 gpm on 9-22-49. See driller's log of test hole drilled to 711 feet.
P- 1	Bessie Ellis.	Robbins-McGowin	D	68	2	Tmu	...	....	......	J	D	..	..	...	
P- 2	Sam Parker	-- Wooten	D	479	..	Tg Tm To	187	....	......	Cy	D	68	7	122	Water leaves yellow stain.
P- 3	H. J. McDonald	H. J. McDonald	D	55	2	Tmu	...	37	1949	C	D, S	..	7	6	
P- 4	John Whitten	Isaac Nearer	D	56	2	Tmu	207	42	......	J	D	68	7	7	Casing: 2-in. to 51 ft.; 2-in. screen from 51 to 56 ft.
P- 5	H. L. Still.	...	..	55	2	Tmu	203	41	1925	C	D, S	..	..	...	
P- 6	G. B. Alford	Isaac Nearer	D	30	1¼	Tmu	180	18	9- -55	P	D	..	..	...	Casing: 1¼-in. to 25 ft.; 1¼-in. screen from 25 to 30 ft.
P- 7	Theodore Redash	Theodore Redash	B	20.7	1¼	Qt	174	13.9	4- 9-56	P	D	68	11	7	
P- 8	Phillip Johns	...	B	33	1¼	Qt	168	17	1955	..	D, S	..	..	...	Casing and screen: 1¼-in. to 33 ft.

P- 9	W. C. Pugh......	O. W. Findley.....	B	60	8	Tmu	175	10.2	4- 9-56	J	D	..	..	...	
P-10	D. B. Wood......	D. B. Wood.......	Dr	22	1¼	Qt	...	....	......	J	D,S	..	..	...	Casing and screen: 1¼-in. to 22 ft.
P-11	Tom Smith.......	Isaac Nearer......	D	41	2	Qt	174	23	1950	J	D,S	..	11	5	Casing and screen: 2-in. to 41 ft.
P-12	J. W. Worthington .	J. W. Worthington ..	B	18	1¼	Qt	...	12	1939	..	D,S	..	..	...	Casing and screen: 1¼-in. to 18 ft.
P-13	....do........	....	D	40	2	Qt	...	....	......	J	D,S	..	..	...	Casing and screen: 2-in. to 40 ft.
P-14	Joe Johns.......	Joe Johns........	D	28	1¼	Qt	162	19	1954	..	D	..	..	...	Casing and screen: 1¼-in. to 28 ft.
P-15	Ben Worthington...	Ben Worthington....	D	20	1¼	Qt	...	....	......	P	D	..	..	...	Casing and screen: 1¼-in. to 20 ft.
P-16	M. M. Burnham...	M. M. Burnham....	D	23.9	1¼	Qt	174	18.8	4-11-56	P	D,S	..	..	...	
P-17	C. E. Dawkins....	C. E. Dawkins.....	B	25	1¼	Qt	...	....	......	P	D	..	..	...	Casing and screen: 1¼-in. to 25 ft.
*P-18	Jim Lovelace.....	Robbins-McGowin...	D	96	2	Tmu	163	50	1955	J	D	..	..	...	Casing and screen: 2-in. to 96 ft.
P-19	....do........	Jim Lovelace......	B	44.0	8	Tmu	163	38.1	4-12-56	..	N	..	..	...	
P-20	Sam Estes.......	....	B	95	2	Tmu	179	....	......	J	D,S	..	..	...	Casing and screen: 2-in. to 95 ft.
P-21	Alphonso Floyd....	....	B	40.6	8	Tmu	183	37.4	4-12-56	M	D,S	..	..	...	
P-22	Ramsey Evans....	-- Barrentine......	D	42	2	Tmu	149	18	1946	..	D	..	..	...	Casing: 2-in. to 37 ft.; 2-in. screen from 37 to 42 ft.
P-23	Dewey King......	....	..	27.5	1¼	Qt	140	15.3	5-22-56	P	D,S	..	..	...	
P-24	Hortense Agerton..	....	..	20.1	1¼	Qt	120	11.5	1-11-57	P	N	66	7	8	
P-25	H. D. Fuqua.....	H. D. Fuqua......	B	19.2	1¼	Qt	114	8.9	5- 3-56	C	D,S	67	11	6	Water leaves yellow stain.
P-26	Tillman Daniels...	....	..	20.5	1¼	Qt	101	12.1	5- 1-56	P	D,S	66	7	8	
P-27	Fred Crawford....	Fred Crawford.....	..	30	1¼	Qt	...	....	......	Cy	D,S	..	..	...	Casing and screen: 1¼-in. to 30 ft.
P-28	....do........	....do.........	B	21.1	1¼	Qt	115	9.0	4-11-56	P	D	66	11	12	
P-29	J. T. Eddings....	J. T. Eddings.....	Dr	20.0	1¼	Qt	174	5.5	4-10-56	P	N	..	..	...	Casing and screen: 1¼-in. to 20 ft.
*P-30	W. T. Neal Estate .	....	D	345.0	6	Tg Tm To	...	+ 8.4	4- 8-57	J,F	D	72	..	...	Casing: 6-in. to 255 ft.; none below. Measured yield 8.6 gpm on 5-25-56. Electric log in files of U.S. Geol. Survey.
P-31	....do........	Robbins-McGowin...	D	60	..	Tmu	164	....	......	J	D,S	..	..	...	
P-32	....do........	....	D	...	4	Tg Tm To	169	....	......	J	D,S	..	7	133	
P-33	....do........	Fred Crawford.....	Dr	20.3	1¼	Qt	...	4.4	4-10-56	P	D	..	..	...	Casing and screen: 1¼-in. to 20.3 ft.
P-34	Phillip T. Johns...	Phillip Johns......	B, Dr	24	2	Qt	168	....	......	..	D	..	..	...	Casing and screen: 2-in. to 24 ft.
P-35	Ander Coxwell....	Joe Taylor........	..	18.3	1¼	Qt	92	9.1	5- 1-56	P	D	67	..	...	Water leaves stain.
P-36	Will Barron......	....	..	15.7	1¼	Qt	91	7.5	5- 1-56	P	D	66	7	10	

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
P-37	L. P. Thomsen . . .	L. P. Thomsen	Dr	26.8	1¼	Qt	87	4.2	5-15-57	P	D	67	7	6	Observation well. Water leaves stain.
P-38	E. Herrington	Arthur Browder	Dr	24.7	. .	Qt	95	13.7	5- 1-56	J	D	. .	7	5	
P-39	T. R. Miller Co. . .	Survey Drilling Co . .	D	400.0	4	Ty Tmb	91	+22.9	3-25-55	F	P	70	. .	. . .	Casing: 4-in. to 295 ft.; none below. Measured flow 60 gpm on 3-25-55. Electric log in files of U.S. Geol. Survey.
Q- 1	. . . .	. . . .	Dr	18.6	1¼	Qt	138	17.7	3-10-53	. .	N	. .	. .	. . .	
*Q- 2	A. F. Holley	Marcus Blair	D	170	4	Tg Tm To	127	27.4	4-12-57	J	D	70	. .	. . .	Casing: 4-in. to 45 ft.; none below.
Q- 3	. . . . do	. . . .	. .	21.1	2	Qt	127	8.1	5-15-57	C	D	. .	. .	. . .	
Q- 4	. . . . do	. . . .	. .	27.7	2	Qt	126	22.3	3- 9-55	Cy	N	. .	. .	. . .	
Q- 5	John Douglas	Ira Felts	D	22.4	2	Qt	129	17.3	3- 9-55	P	D	67	9	8	
Q- 6	John W. Hoomes. . .	John W. Hoomes. . . .	Dr	16.0	1¼	Qt	109	8.3	3-10-55	P	N	. .	. .	. . .	
Q- 7	. . . . do	. . . . do	Dr	15.4	1¼	Qt	171	9.9	3-10-55	P	N	. .	. .	. . .	
Q- 8	E. J. Hoomes	E. J. Hoomes	B	16.5	1¼	Qt	161	9.6	3- 9-55	P	D	. .	. .	. . .	Casing and screen: 1¼-in. to 16.5 ft.
Q- 9	Mance Cook	. . . .	. .	20.0	2	Qt	143	16.3	2- 9-55	. .	N	. .	. .	. . .	
Q-10	Alfred King	L. K. Stone	. .	32.5	2	Qt	134	14.6	5-28-56	P	D,S	68	7	5	
Q-11	Eula Mae Jackson . .	Isaac Nearer	D	21.0	1¼	Qt	130	9.8	5-25-56	P	D	66	. .	. . .	Casing and screen: 1¼-in. to 21 ft.
Q-12	Noah Hicks	. . . . do	D	17.5	1¼	Qt	. . .	7.5	5-25-56	P	D,S	66	11	11	Casing and screen: 1¼-in. to 17.5 ft.
Q-13	J. D. Barrow.	. . . . do	D	24.7	1¼	Qt	. . .	14.1	5-28-56	P	D	68	7	6	
Q-14	Will Alford	Will Alford	. .	15	1¼	Qt	. . .	. . . .	. . . . . .	C	D,S	. .	. .	. . .	Casing and screen: 1¼-in. to 15 ft.
Q-15	J. T. Alford	. . . .	. .	17.6	1¼	Qt	185	6.1	5-15-57	P	N	. .	. .	. . .	Observation well.
Q-16	James Alford.	James Alford.	. .	23.2	1¼	Qt	185	18.7	6- 6-56	P	S	67	. .	. . .	
Q-17	W. L. Owens	Bud Barlow	. .	18.6	2	Tmu	194	14.9	6-28-56	P	D	67	11	6	

Q-18	Escambia County Board of Education.	Marcus Blair	D	670	4	Tg Tm To Ty Tmb Tgs Tl	218	60	1951	Cy	P	. .	2	149	Casing: 4-in. to 234 ft.; none below. Supplies school.
Q-19	Cyrus Koon	Isaac Nearer	D	71	2	Tmu	217	55	1951	J	D,S	. .	11	7	Casing: 2-in. to 66 ft.; 2-in. screen from 66 to 71 ft.
Q-20	E. H. Stone	. . . . do	D	35	2	Tmu	211	24	1950	Cy	D	. .	11	11	
Q-21	Mary Stone	. . . . do	D	87	2	Tmu	234	75	1953	Cy	D,S	68	11	4	
Q-22	Ernest McGowin . . .	. . . . do	D	32.0	1¼	Tmu	206	23.4	6-12-56	P	D	. .	. .	. . .	Casing: 1¼-in. to 30 ft.; screen from 30 to 32 ft.
Q-23	M. H. Koon	. . . . do	D	63	2	Tmu	202	22	1950	J	D,S	. .	7	11	Casing: 2-in. to 59 ft.; 2-in. screen from 59 to 63 ft.
Q-24	A. C. Cook	. . . . do	D	23.4	2	Tmu	181	. . . .	. . . . . .	J	D	. .	. .	. . .	
Q-25	Ernest McGowin . . .	. . . . do	D	70	2	Tmu	221	50	1954	J	D	. .	11	6	Casing: 2-in. to 65 ft.; 2-in. screen from 65 to 70 ft.
Q-26	C. M. Stone	L. K. Stone	D	63.5	2	Tmu	219	53.4	6-15-56	J	D,S	. .	. .	. . .	
Q-27	A. L. Cook	Isaac Nearer	D	42	2	Tmu	205	30	1956	Cy	D	69	11	4	Casing: 2-in. to 37 ft.; 2-in. screen from 37 to 42 ft.
Q-28	John L. White	L. K. Stone	D	65	2	Tmu	219	50	. . . . . .	J	D,S	. .	. .	. . .	Casing: 2-in. to 58 ft.; 2-in. screen from 58 to 65 ft.
Q-29	A. L. Cook	Isaac Nearer	D	65	2	Tmu	228	53	1956	Cy	D,S	. .	11	6	Casing: 2-in. to 60 ft.; 2-in. screen from 60 to 65 ft.
Q-30	G. D. White	. . . . do	D	65	2	Tmu	219	55	1945	Cy	D	. .	. .	. . .	
Q-31	H. H. Findley	. . . . do	D	55	2	Tmu	. . .	43	1951	J	D	. .	7	8	
Q-32	R. M. Cotton	R. M. Cotton	. .	76	2	Tmu	. . .	62	1950	Cy	D,S	. .	4	7	Casing: 2-in. to 71 ft.; 2-in. screen from 71 to 76 ft.
Q-33	J. R. Holland	Isaac Nearer	D	100	2	Tmu	234	79	1954	J	D,S	. .	11	9	Casing: 2-in. to 95 ft.; 2-in. screen from 95 to 100 ft.
Q-34	Albert Kirkland . . .	Albert Kirkland	D	50	3	Tmu	. . .	36	1941	J	D,S	. .	7	7	Casing: 3-in. to 42 ft.; 3-in. screen from 42 to 50 ft.
Q-35	A. C. Worrell	A. C. Worrell	Dr	23.7	1¼	Qt	. . .	15.6	5- 3-56	P	D,S	67	4	12	
Q-36	Escambia County Board of Education.	Flo Drilling Co.	Dr	38	2	Qt	. . .	. . . .	. . . . . .	J	P	. .	. .	. . .	Casing: 2-in. to 33 ft.; 2-in. screen from 33 to 38 ft. Supplies school.
Q-37	Israel Culliver	Luke Fowler	. .	36.0	2	Qt	. . .	20.3	5- 9-56	P	D	70	4	8	
Q-38	John King	John King	. .	24.4	1¼	Qt	. . .	14.0	5- 9-56	P	D	66	. .	. . .	
Q-39	E. M. Evans	. . . .	D	71	2	Tmu	. . .	40	1930	Cy	D	67	7	7	Casing: 2-in. to 66 ft.; 2-in. screen from 66 to 71 ft.
Q-40	J. T. McGowin	Marcus Blair	D	97	4	Tc (?)	176	17	1948	J	D,S	. .	7	119	

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
Q-41	S. R. Evans.	. . . .	D	204	3	Tg Tm To	. . .	21.0	5- 9-56	P	D	68	7	153	
*Q-42	Fletcher Lucas. . . .	. . . .	D	340	3	Tg Tm To Ty Tmb Tgo (?)	. . .	. . . .	. . . . . .	F, C	D, S, Ind	72	. .	. . .	Casing: 3-in. to 138 ft.; none below. Measured flow 3.2 gpm on 4-8-57. Deepened from 138 to 340 ft. Flowed from depth of 138 ft.
Q-43	B. C. Alford	B. C. Alford	Dr	19.3	1½	Qt	. . .	14.6	5- 9-56	P	D	. .	21	7	
Q-44	A. A. McGowin . . .	Isaac Nearer	D	22.8	1½	Qt	. . .	12.5	5- 9-56	P	D	. .	. .	. . .	
Q-45	B. M. Stone.	Marcus Blair.	D	56	2	Tc (?)	. . .	18	1946	C	D, Ind	. .	4	121	Supplies dairy.
Q-46	H. E. Gulsby	. . . . do	D	160	3	Tg Tm To	164	34	1- -55	J	D	. .	4	146	Casing: 3-in. to 112 ft.; none below.
Q-47	J. L. Johnson	White Bros	D	109	2	Tb (?)	155	5.1	5-10-56	P	D	65	11	5	
Q-48	Lee Johnson.	. . . . do	D	16.8	2	Qt	156	5.5	5-10-56	P	D	65	18	10	
Q-49	Gid White	Flo Drilling Co.	D	173	3	Tg Tm To	155	24.9	2- 1-57	J	D	70	7	154	Casing: 3-in. to 105 ft.; none below. Pumped at 10 gpm. See driller's log.
Q-50	K. Kendall.	W. A. Blair.	D	140	3	Tg Tm To	157	27	1954	J	D	. .	7	144	
Q-51	Narvell Alford	. . . . do	D	150	3	Tg Tm To	152	23	1954	J	D	. .	7	145	Casing: 3-in. to 100 ft.; none below.
Q-52	E. J. Lucus.	E. J. Lucus.	B	21.2	1½	Qt	. . .	9.2	5-10-56	P	D, S	64	28	19	
Q-53	Gid Mancil.	Isaac Nearer	D	18.4	2	Qt	. . .	10.5	5-10-56	P	D	65	21	44	
Q-54	R. A. Strong	Roy Weaver.	. .	63	1½	Tc (?)	. . .	8.0	5-25-56	P	D	. .	39	51	

Q-55	J. S. Alford	Marcus Blair	D	147.0	4	Tg Tm To	134	14.5	3-18-57	C	D	..	7	128	Casing: 4-in. to 89 ft.; none below.
Q-56	Mary E. Roberson		..	18.0	1½	Qt	...	8.1	5-13-57	P	N	..	..	...	
Q-57	C. J. Thomas	Isaac Nearer	D	20.0	1½	Qt	...	8.7	5-25-56	P	D,S	68	11	6	
Q-58	I. G. Cook		D	200.0	4	Tg Tm To	101	+20.7	6- 6-56	F	N	68	7	135	Casing: 4-in. to 30 ft.; none below. Measured flow 31.7 gpm on 4-8-57. Electric log in files of U.S. Geol. Survey.
Q-59	T. R. Miller		D	410.0	4	Tmb Tgo	131	+20.8	8-16-56	F	S	72	7	144	Casing: 4-in. to 328 ft.; none below. Measured flow 15 gpm on 4-8-57. Electric log in files of U.S. Geol. Survey.
Q-60	Harvey Fowler	Isaac Nearer	D	70	2	Tmu	...	55	1948	Cy	D,S	..	7	9	Casing: 2-in. to 65 ft.; 2-in. screen from 65 to 70 ft.
Q-61	Isaac Nearer	do	D	28	½	Tmu	...	19	1955	P	D,S	67	11	17	
Q-62	Clarence McArthur	do	D	60	..	Tmu	...	50	1948	Cy	D	69	0	7	
Q-63	F. A. Hoomes		..	90	..	Tmu	208	....	......	..	D,S	..	2	8	
*Q-64	George Wiggins	Isaac Nearer	D	93	2	Tmu	218	77	1950	Cy	D,S	68	..	...	Casing: 2-in. to 88 ft.; 2-in. screen from 88 to 93 ft. See driller's log. Water leaves stain.
Q-65	David Miller		D	180 (?)	..	Tg Tm To	104	....	1958	..	D	..	..	...	Electric log in files of U.S. Geol. Survey.
Q-66	R. L. Bracken		D	80	2	Tmu	188	....	......	Cy	D	..	0	7	
Q-67	Charles Murphy	Isaac Nearer	D	70	..	Tmu	195	58	1948	Cy	D	69	2	8	
Q-68	Elam Baptist Church		..	80	2	Tmu	192	70	......	J	D	..	0	8	
Q-69	C. C. Herrington	Isaac Nearer	D	95	2	Tmu	217	85	1945	Cy	D	68	0	9	
Q-70	E. M. Herrington		D	70	..	Tmu	225	....	......	Cy	D	..	0	8	
Q-71	A. C. Pittman	Isaac Nearer	D	95	2	Tmu	207	....	......	Cy	D,S	..	0	8	Deepened from 75 to 95 ft.
Q-72	Horace Murphy	G. W. Hoomes	D	95	2	Tmu	225	89	1953	Cy	D,S	..	12	10	
Q-73	John H. Douglas	Isaac Nearer	D	95	2	Tmu	223	83	1950	Cy	D,S	68	2	7	
Q-74	Robert L. Ball	do	D	43	..	Tmu	209	33	1942	Cy	D	68	17	47	
Q-75	Cleve Fuqua		B	15.6	10	Tmu	235	....	......	M	D	..	..	...	
Q-76	A. C. Cook	Flo Drilling Co.	D	293	4	Tg Tm To	...	50.8	5-24-57	T	D,S	..	..	...	Casing: 4-in. to 210 ft.; none below. See driller's log.
R- 1	L. H. Pate	Isaac Nearer	D	42	2	Tmu	201	33	1951	Cy	D	67	1	7	Casing: 2-in. to 36 ft.; 2-in. screen from 36 to 42 ft.

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (°F)	Chloride (Cl) (ppm)	Hardness as CaCO$_3$ (ppm)	
R- 2	J. M. Mancil	. . . .	D	110	2	Tmu	278	. . . .	. . . . . .	Cy	D	. .	16	18	Casing: 2-in. to 105 ft.; 2-in. screen from 105 to 110 ft.
R- 3	David Almond.	Isaac Nearer	D	68	2	Tmu	239	. . . .	. . . . . .	Cy	S	. .	1	10	Casing and screen: 2-in. to 68 ft.
R- 4	Rabb Debrow	. . . . do	D	35	2	Tmu	200	5.0	3-15-55	Cy	N	. .	. .	. . .	
R- 5	L. W. Gray.	L. W. Gray.	Dr, B	16.6	1¼	Qt	126	11.9	3-15-55	P	D	66	2	14	
R- 6	Carrie Smith	Frank Smith.	Dr, B	23	1¼	Qt	124	. . . .	. . . . . .	P	D,S	65	4	71	Casing and screen: 1¼-in. to 23 ft.
R- 7	Thomas McMillan . .	. . . .	D	218.5	4	Ty Tmb	116	. . . .	4- -57	F	N	. .	. .	. . .	Casing: 4-in. to 145 ft.; none below. Electric log in files of U.S. Geol. Survey.
R- 8	Carrie Smith	Sam Smith.	Dr, B	18.3	1¼	Qt	118	13.1	3-15-55	P	D,S	66	2	28	
R- 9	T. R. Miller Co. . .	Jim Logan.	D	348.8	4	To Ty Tmb	110	26.6	3-15-55	. .	N	. .	. .	. . .	Casing: 4-in. to 107 ft.; none below. Electric log in files of U.S. Geol. Survey.
R-10	. . . . do	J. J. Barlow	D	18.4	2	Qt	118	15.3	3-15-55	Cy	D	. .	4	25	
R-11	Buddy McGowin . . .	. . . .	Dr	20.8	1¼	Qt	146	17.8	3- 8-55	P	D	68	6	14	
R-12	J. C. McGowin. . . .	Fred McCreary	D	. . .	3	Tg Tm To	131	40	1929	P	D	. .	2	164	
R-13	E. L. Nettles.	Marcus Blair	D	165	4	Tg Tm To	132	40	1948	J	D	. .	1	132	Casing: 4-in. to 43 ft.; none below.
R-14	A. F. Holley	Deep Well Drilling Co.	D	327	6	Tg Tm To Ty Tmb Tgo	. . .	+13	9-20-50	F	S	70	. .	. . .	
R-15	James Williams . . .	Isaac Nearer	D	14.8	1¼	Qt	117	6.6	7-30-56	P	D	69	28	26	

R-16	Jane Morbley.....	.....do..........	Dr, B	19.0	1¼	Qt	122	13.9	3-15-56	P	D	66	4	18	
R-17	E. B. Avant.....	.....do..........	D	...	2	Tmu	207	....	......	J	D	..	2	12	
R-18	David Almond.....	....	D	100	3	Tmu	279	....	......	Cy	D	..	..	...	
R-19	A. C. Pierce.....	A. C. Pierce......	D	82	2	Tmu	261	....	......	Cy	D	67	2	7	Casing: 2-in. to 77 ft.; 2-in. screen from 77 to 82 ft.
R-20	-- Prestwood.....	....	..	...	2	Tmu	266	....	......	P	D	..	..	...	
R-21	Archie Garvin	Robbins-McGowin...	D	87	2	Tmu	270	....	......	J	D	..	1	8	Casing and screen: 2-in. to 87 ft.
R-22	J. H. Brown	....	..	68	2	Tmu	276	....	......	Cy	D	..	..	...	
R-23	Porter Wilson	....	..	65	2	Tmu	267	....	......	Cy	D	69	1	6	
R-24	W. B. Wryroadick .	Isaac Nearer......	D	65	2	Tmu	256	....	......	P	D	..	1	2	Deepened from 20 to 65 ft.
R-25	J. R. Barnes.....	.....do..........	D	80	2	Tmu	267	....	......	J	D	..	2	21	
R-26	Jack Clements	.....do..........	D	75	2	Tmu	262	40	1943	J	D,S	..	2	10	Casing and screen: 2-in. to 75 ft.
R-27	Mack Hoomes.....	.....do..........	D	54	2	Tmu	258	....	......	J	D	..	7	29	Casing: 2-in. to 49 ft.; 2-in. screen from 49 to 54 ft.
R-28	S. N. Hughes.....	....	..	70	2	Tmu	258	32	1950	J	D,S	..	2	15	Casing and screen: 2-in. to 70 ft.
*R-29	Porter Wilson	J. A. Watson......	D	220	4	Tc Tb Tg Tm To	250	30	1955	P	D,S	..	..	...	Casing: 4-in. to 120 ft.; none below.
R-30	W. E. Oglestreet ..	Walter Douglas.....	B	14.3	1¼	Tmu	238	12.9	3-17-56	P	D,S	66	2	16	Limited supply during fall months.
R-31	J. C. Hart.......	Isaac Nearer	D	80	2	Tmu	309	....	......	Cy	D,S	67	2	7	Casing and screen: 2-in. to 80 ft.
R-32	W. O. Parrish....	Etheridge Plumbing Co.	D	122	4	Tmu	292	....	......	J	D	..	1	7	Casing: 4-in. to 112 ft.; 4-in. screen from 112 to 122 ft.
R-33	W. L. Hart......	-- Payne..........	D	70	2	Tmu	292	....	......	J	D	..	5	6	Casing: 2-in. to 65 ft.; 2-in. screen from 65 to 70 ft.
R-34	W. W. Watson....	....	D	39.7	2	Tmu	239	6.9	4-18-57	J	D	..	..	...	Casing: 2-in. to 34.7 ft.; 2-in. screen from 34.7 to 39.7 ft.
R-35	.....do........	Jack Davis........	D	40	2	Tmu	244	....	......	Cy	S	67	1	7	
R-36	Richard Poindexter.	Isaac Nearer	D	65	2	Tmu	274	....	......	Cy	D,S	..	2	6	Casing: 2-in. to 61 ft.; 2-in. screen from 61 to 65 ft.
R-37	Ruth Miller......	Richard Poindexter..	D	28.5	2	Tmu	238	23.8	3-21-56	P	D	..	..	...	
R-38	A. J. Gray	A. J. Gray	D	38	2	Qt	122	17	1955	J	D,S	..	7	22	
R-39	Escambia County Board of Education.	Isaac Nearer	D	19.4	1¼	Qt	122	11.5	7-27-56	P	P	..	..	...	Water leaves yellow stain.

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
R-40	Marietta Baptist Church.	Isaac Nearer	D	19.7	1¼	Qt	118	10.7	7-30-56	P	P	66	11	16	Water leaves yellow stain.
R-41	Callie Avant.	. . . . do	D	27.3	1¼	Qt	125	20.6	7-30-56	P	D	67	7	14	
R-42	Dewitt Davidson . . .	Dewitt Davidson	D	52	2	Tmu	. . .	43	1938	Cy	D,S	. .	14	9	Casing and screen: 2-in. to 52 ft.
R-43	Jewitt Bradley	. . . .	D	18.2	1¼	Tmu	. . .	9.5	7-30-56	P	D,S	. .	. .	. . .	
R-44	H. C. Bradley	H. C. Bradley	D	22	1¼	Tmu	. . .	. . . .	. . . . . .	P	D	. .	16	18	
R-45	C. E. Edwards. . . .	Isaac Nearer	D	45	2	Tmu	238	. . . .	. . . . . .	J	D	70	1	9	Casing: 2-in. to 40 ft.; 2-in. screen from 40 to 45 ft.
S- 1	J. H. Jones	. . . .	Du	19.6	12	Tmu	. . .	12.4	8-10-56	J	D,S	. .	. .	. . .	
S- 2	John J. Giles	John J. Giles	D	104	2	Tmu	262	94	1951	J	D,S	. .	1	5	Casing: 2-in. to 99 ft.; 2-in. screen from 99 to 104 ft.
S- 3	S. E. Beasley	. . . .	D	95	3	Tmu	233	. . . .	. . . . . .	J	D	. .	1	4	Casing: 3-in. to 76 ft.; none below.
S- 4	Wilma Henley.	Isaac Nearer	D	65	2	Tmu	201	50	1950	J	D	. .	1	6	
S- 5	L. W. Henley.	. . . .	Du	28.0	24	Tmu	207	24.3	3-21-55	M	D,S	67	9	53	
S- 6	Hampford Green. . .	. . . .	. .	11.5	1½	Tmu	. . .	6.1	3-25-55	P	N	. .	2	13	
S- 7	. . . .	. . . .	Dr	15.8	1¼	Tmu	. . .	7.9	4-20-56	P	N	. .	. .	. . .	
S- 8	Hubert Spence	. . . .	Dr	29	1¼	Tmu	167	. . . .	. . . . . .	P	D	66	1	4	
S- 9	Houston Spence. . . .	Houston Spence.	Du	42.2	8	Tmu	199	38.5	8- 8-56	M	D	70	23	72	
S-10	Earl Bray	Hubert Spence	D	41	2	Tmu	. . .	. . . .	. . . . . .	Cy	D	67	1	12	
S-11	Ingram Spence	Isaac Nearer	D	75	2	Tmu	. . .	63	1953	Cy	D	. .	7	24	Casing: 2-in. to 70 ft.; 2-in. screen from 70 to 75 ft.
S-12	L. D. Spence	L. D. Spence	D	67	2	Tmu	. . .	50	1955	Cy	D	. .	. .	. . .	
S-13	J. C. Elliott	Hubert Spence	D	83	2	Tmu	. . .	. . . .	6- -56	J	D,S	. .	7	44	
S-14	Hardin Gatewood. . .	Hardin Gatewood. . . .	. .	22.5	1¼	Tmu	. . .	16.1	8-10-56	P	D	70	. .	. . .	

S-15	Cecil Palmer	Albert Beasley	D	104	2	Tmu	...	80	1953	Cy	D, S	..	7	10	Casing: 2-in. to 100 ft.; 2-in. screen from 100 to 104 ft. Water leaves stain.
S-16	H. E. Palmer	Charles Casin	D	66	2	Tmu	...	....	......	J	D, S	70	7	20	
S-17	R. W. Palmer	J. A. Watson	D	272	4	Tmu Tg (?)	...	64	1954	J	D	..	7	18	Water from depth of 272 ft. not usable because of excessive iron content. Casing perforated at 90 ft. to obtain suitable supply.
*S-18	J. H. Elliott, Sr.	....	D	175	4	Tmu	202	52	1953	J	D, S	71	..	...	Casing: 4-in. to 150 ft.; none below. Water leaves stain.
S-19	Grover Henley	Hubert Spence	D	52	2	Tmu	...	....	......	Cy	D	68	..	...	
S-20	Julian Henley	....do	D	42	2	Tmu	...	....	......	..	N	..	..	...	
S-21	Assembly of God Church.	....do	D	57	2	Tmu	...	....	......	Cy	D	..	..	...	
S-22	H. R. McKissack	H. R. McKissack	D	46	2	Tmu	172	....	......	J	D, S	..	1	7	Casing: 2-in. to 41 ft.; 2-in. screen from 41 to 46 ft.
S-23	E. T. Worrell	E. T. Worrell	Du	35.0	36	Tmu	179	31.3	......	M	D	67	4	66	
S-24	....do	E. L. Thomason	D	84	2	Tmu	179	....	......	J	D, S	..	0	17	Casing and screen: 2-in. to 84 ft.
S-25	J. D. Canady	Isaac Nearer	D	53	2	Tmu	185	26	1949	J	D, S	..	2	9	
S-26	....do	....do	D	70	2	Tmu	202	55	1952	Cy	D	..	..	...	Casing and screen: 2-in. to 70 ft.
S-27	H. D. Lee	Albert Beasley	D	60	2	Tmu	189	....	......	Cy	D	66	2	6	
S-28	J. B. Henley	Cleveland Coxwell	..	22	..	Tmu	...	....	......	P	D	..	11	41	
S-29	B. A. Ballard	J. Jeffers	Du	33.1	30	Tmu	...	24.6	8-10-56	..	...	..	..	...	Goes dry during droughts.
S-30	W. J. Taylor	Flo Drilling Co.	D	92	2	Tmu	...	....	......	J	D	..	7	25	Casing: 2-in. to 87 ft.; 2-in. screen from 87 to 92 ft. See driller's log.
S-31	J. C. Nelson	Hubert Spence	D	73	2	Tmu	...	....	......	J	D, S	..	10	40	
S-32	James Nelson	....	D	97	2	Tmu	...	....	......	Cy	D	..	11	16	Water leaves stain.
S-33	Claude Crosby	Spillers Well and Pump Co.	D	99	..	Tmu	...	....	......	J	D, S	..	7	14	Test well drilled to 300 ft. Water leaves yellow stains.
S-34	Angus Adams	O. W. Findley	D	42	2	Tci	...	....	......	J	D	..	0	10	
S-35	J. D. Wallace	....	..	25	..	Tci	...	....	......	C	D	..	31	84	
S-36	George W. Jackson	....	D	47	2	Tci	...	33	1954	Cy	D	69	0	6	
S-37	John Bray	Robbins-McGowin	D	44	2	Tci	...	29	1952	J	D	..	4	10	
*S-38	J. M. Kent	Spillers Well and Pump Co.	D	200	2	Tmu	...	120	1952	Cy	D, S	68	..	...	Casing and screen: 2-in. to 200 ft.
S-39	Henry Booker	....	..	26.8	1½	Tci	...	18.0	8- 8-56	P	D	68	4	14	
S-40	E. J. Booker	-- Ashburn	D	95	2	Tci	...	50	1950	Cy	S	..	2	11	

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as CaCO3 (ppm)	
S-41	E. J. Booker.....	-- Ashburn	D	87	2	Tci	...	71	1950	J	D	69	2	6	
S-42	J. L. Wiggins	Norville Pittman....	D	65	2	Tci	...	40	1951	Cy	D	69	2	13	
S-43	Hugh J. Elliott....	Albert Beasley.....	D	78	2	Tci	...	....	......	..	D, S	..	11	13	
T- 1	James Wiggins....	Isaac Nearer	D	48	2	Tmu	188	36	1954	Cy	D, S	70	13	12	Casing: 2-in. to 43 ft.; 2-in. screen from 43 to 48 ft.
T- 2	E. J. Herrington ..	....	..	...	..	Tmu	170	....	......	..	D, S	..	2	10	
T- 3	Edmund Herrington	....	B	24.7	8	Tmu	139	....	......	M	D	..	..	...	
T- 4	J. M. Wilson.....	Isaac Nearer	D	85	2	Tmu	177	70	1953	J	D	69	0	6	Casing: 2-in. to 80 ft.; 2-in. screen from 80 to 85 ft.
T- 5	Henry King	....	B	21.0	10	Tmu	165	20.5	10-18-56	M	D	69	0	8	
T- 6	B. S. Parker.....	B. S. Parker......	..	15	1½	Tmu	116	....	......	P	D	..	13	22	
T- 7	R. L. Koon	R. L. Koon	D	93	2	Tmu	131	53	1939	Cy	N	..	..	...	Well abandoned.
T- 8	Clyde Thomas	Isaac Nearer	D	94	2	Tmu	174	65	1953	J	D	68	0	5	Casing: 2-in. to 89 ft.; 2-in. screen from 89 to 94 ft.
T- 9	Leon Thomas.....	....do..........	D	45	..	Tmu	180	37	1953	Cy	D	..	0	4	
T-10	Gus Thomas......	....	..	75	..	Tmu	204	....	......	Cy	D	..	0	8	
T-11	S. E. Parker.....	....	..	22	..	Tmu	218	....	......	P	D	..	13	38	
T-12	Gordon Parker....	....	D	78	2	Tmu	216	....	......	Cy	D, S	68	0	6	
*T-13	Escambia County Board of Education.	Marcus Blair......	D	600	4, 3	Tg Tm To Ty Tmb Tgo (?)	258	70	1952	C	P	70	..	...	Casing: 4-in. to 256 ft.; 3-in. from 256 to 400 ft.; none below. School supply.
T-14	H. J. Butts......	H. J. Butts.......	D	42	2	Tci	...	....	......	J	D, S	..	4	10	Casing and screen: 2-in. to 42 ft.

T-15	Alex Fuqua	....	..	21.9	15	Tci	...	16.6	8-11-56	P	D	..	..	...	
T-16	Leslie Phillips....	Narvell Pittman	D	30	1½	Tci	...	24	......	P	D,S	..	..	...	
T-17	Willie Tyree	Willie Tyree	D	65	2	Tci	...	....	......	C	D	..	11	16	
U- 1	W. W. Jackson....	Luke McDaniel.....	D	75	..	Tmu	219	48	1949	Cy	D,S	69	1	10	
U- 2	S. E. Parker.....	O. W. Findley	D	60	2	Tmu	213	40	1953	J	D	69	1	2	
*U- 3	Claude Thomas....	W. A. Blair.......	D	305	3	Tmu (?) Tc	215	90	1954	Cy	D,S	69	..	...	Casing: 3-in. to 250 ft.; 2-in. slotted casing from 242 to 305 ft.
U- 4	J. T. Bush	Isaac Nearer	D	83	2	Tmu	212	53	1945	Cy	D,S	..	38	76	Casing: 2-in. to 78 ft.; 2-in. screen from 78 to 83 ft.
U- 5	Willis Crutchfield..	Willis Crutchfield...	D	83	2	Tmu	218	66	1951	J	D,S	..	0	6	
U- 6	Joe Crutchfield....	-- Barlow	D	95	2	Tmu	218	77	1933	J	D,S	..	2	18	
U- 7	Robert Bush......	Robert Bush.......	D	95	2	Tci	269	83	1951	Cy	D	..	2	7	
U- 8	R. M. Fuqua.....	....	..	21.2	1½	Qt	...	12.2	4-30-56	J	D	..	..	...	
U- 9	Dempsey Batson...	Dempsey Batson....	..	18.7	2	Qt	...	9.1	4-30-56	C	D,S	..	..	...	
U-10	E. M. H. Cox	E. M. H. Cox	..	18.9	1½	Qt	...	11.9	4-30-56	P	D	..	4	8	
U-11	Percy Brooks.....	Perry Brown	D	400	3	Tg Tm To	...	....	......	..	D	71	7	133	
U-12	Joe Taylor.......	Joe Taylor........	Dr	20.5	1½	Qt	...	10.6	4-27-56	P	S	66	7	6	
U-13	Clinton G. Pearson.	Albert Beasley.....	J	116	2	Tci	296	82	10-14-55	J	D,S	72	0	21	Casing: 2-in. to 111 ft.; 2-in. screen from 111 to 116 ft. Pumped at 4.3 gpm. See driller's log.
U-14	L. B. Fuqua	Williams Pump Co ..	D	100	2	Tci	296	70	1947	J	D	..	1	10	Casing: 2-in. to 95 ft.; 2-in. screen from 95 to 100 ft.
U-15	B. S. Littel......	....	..	80	..	Tci	299	....	......	Cy	D	69	13	19	
U-16	W. J. Barnes.....	....	..	75	..	Tci	302	58	1955	..	D,S	..	0	8	
*U-17	M. J. Brakeen....	-- Smith	D	120	2	Tci	301	60	1952	J	D,S	70	..	...	
U-18	William Grice, Jr. .	Bill Warrick	D	35	2	Tmu	...	20	2- -55	Cy	D	68	4	7	
U-19	William Grice, Sr. .	-- Barrentine......	D	34	2	Tmu	...	24	1942	Cy	D,S	73	7	8	
U-20	Richard Nelson....	Bill Warrick	D	101	2	Tmu	...	87	1- -55	Cy	D	69	1	7	
U-21	T. M. Nelson.....	Etheridge Plumbing Co.	D	132	2	Tmu	...	103	1955	P	D	..	1	12	Casing: 2-in. to 126 ft.; 2-in. screen from 126 to 132 ft. See driller's log.
U-22	Harvey Grice.....	....	D	52	2	Tmu	...	39	1951	J	D	..	1	3	
U-23	Riley T. Grice....	-- Barrentine......	D	80	2	Tmu	...	65	......	Cy	D,S	70	0	5	Casing: 2-in. to 75 ft.; 2-in. screen from 75 to 80 ft.

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level: Above (+) or below land surface (feet)	Water level: Date of measurement	Method of lift	Use of water	Field determinations: Temperature (° F)	Field determinations: Chloride (Cl) (ppm)	Field determinations: Hardness as CaCO3 (ppm)	Remarks
U-24	Leroy Fuqua	....	D	140	2	Tci	...	128	1952	Cy	D	70	2	5	
U-25	S. E. Butts	....	..	32	..	Tci	271	....	......	P	D	..	1	5	
U-26	U. B. Fuqua	....	..	65	..	Tci	270	....	......	Cy	D, S	69	1	4	
U-27	Fern B. Fuqua....	....	D	107	2	Tci	297	87	1947	Cy	D	70	11	9	
U-28	G. C. Peevy	-- Barrentine......	D	120	2	Tci	...	....	......	J	D, S	..	1	4	
U-29	E. L. Jernigan....	E. L. Jernigan.....	D	108	2	Tci	...	....	......	Cy	D, S	68	2	6	
U-30	J. J. Jernigan	-- Warrick	D	113	2	Tci	...	100	1950	Cy	D, S	..	1	7	
U-31	P. Thompson.....	-- Barrentine......	D	98	2	Tci	...	....	......	Cy	D	71	1	7	
V- 1	T. R. Miller	Marcus Blair......	D	310.0	4, 3	Tg	84	+33.6	3-15-57	F	Irr, S	71	4	128	Casing: 4- to 3-in. to 300 ft.; none below. Measured drawdown 31.3 ft. after flowing 32.3 gpm on 4-5-57. Electric log in files of U.S. Geol. Survey. Reported depth 420 ft.
*V- 2	E. C. Spinks	E. C. Spinks	Dr	26	1¼	Qt	...	16	1954	P	D	68	..	...	Casing and screen: 1¼-in. to 26 ft. Water leaves yellow stain.
V- 3	Garfield Weaver...	....	..	16.0	1¼	Qt	84	7.6	4-27-56	P	D	66	11	8	
V- 4	E. C. Spinks	....	..	18.1	1¼	Qt	83	10.1	4-27-56	P	D	66	..	...	
V- 5	L. T. Weaver	L. T. Weaver	..	28	1¼	Qt	...	....	......	P	D	..	7	13	Water leaves yellow stain.
V- 6	Fred Weaver	Wyatt Brothers.....	Dr	17.3	2	Qt	84	7.8	4-26-56	P	D	65	7	18	Do.
V- 7	J. T. Kennedy	-- Kennedy	..	22	1¼	Qt	...	....	......	P	D	..	12	14	
V- 8	J. J. Haveard	Louis Grice.......	..	18	1¼	Qt	...	....	......	Cy	D	..	11	13	
V- 9	Yancey Mantle	Marcus Blair......	D	540.0	4	Tg Tm To Ty Tmb Tgo Tl	85	+34.5	3-19-57	F	D	73	0	114	Casing: 4-in. to 284 ft.; none below. Measured flow 60.0 gpm on 12-14-57. Electric log in files of U.S. Geol. Survey.

V-10	Billy English	-- Hostedder	D	402	4, 2	Tm To	83	+18.8	1-14-55	F	S	72	2	118	Casing: 4-in. from surface to 188 ft.; 2-in. from surface to 292 ft.; none below. Measured flow 27.3 gpm on 1-14-55.
V-11	C. W. Nolin.	Marcus Blair	D	655	4	Tm To Ty Tmb Tgo Tl	84	+46	1952	F	D	. .	0	102	Casing: 4-in. to 300 ft.; none below.
V-12	Henry Mantle	. . . .	D	400	2	Tg Tm To	95	+ 4.0	1-14-55	F	D, S	70	0	110	Casing: 2-in. to 280 ft.; none below. Measured flow 1.8 gpm on 12-15-54.
V-13	John Stewart	-- Wooten	D	45	3	. . .	92	. . . .	. . . . . .	. .	. . .	. .	. .	. . .	Filled in and abandoned.
V-14	Yancey Maddox. . . .	. . . . do	D	300	3	Tg Tm	83	+10.0	12-17-54	F	D, S	71	0	112	
V-15	W. H. Harold.	. . . . do	D	380	4, 2	Tg Tm To	100	. . . .	. . . . . .	F	N	72	. .	. . .	Measured flow 2.7 gpm on 11-17-54.
V-16	Lena Ashton.	. . . . do	D	400	2	Tg Tm To	103	+ 6.5	1-15-55	F	S	71	2	108	Measured flow 1.1 gpm on 11-17-54.
V-17	Leonard Evans	. . . . do	D	575	2	Tg Tm To Ty Tmb Tgo Tl	100	+11.2	11-12-54	F	D	72	0	102	Measured flow 11.1 gpm on 11-12-54.
V-18	Kennie Ashton	Hughes Water Well Co.	D	420	3	Tg Tm To	79	+ 2.5	11-17-54	F, P	D	68	. .	. . .	Casing: 3-in. to 84 ft.; none below.
V-19	Frank Harris	-- Wooten	D	381	6, 3	Tg Tm To	75	. . . .	11-16-54	F	D	. .	0	104	Casing: 6-in. and 3-in. to 100 ft.; none below. Measured flow 27.0 gpm on 11-16-54.
V-20	O. H. Padgett	George Brown	D	520	3	Tg Tm To Ty Tmb Tgo	104	+ 7.9	1-14-55	F	S	71	0	108	Measured flow 5.0 gpm on 12-15-54.
V-21	R. E. Taylor	Marcus Blair	D	415.0	4	Tg Tm To	89	+17.2	1-14-55	F	D, S	75	0	100	Casing: 4-in. to 333 ft.; none below. Measured flow 25.0 gpm on 1-17-55. Electric log in files of U.S. Geol. Survey.

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as CaCO$_3$ (ppm)	
*V-22	R. E. Taylor	Marcus Blair	D	730.0	4	Tg Tm To Ty Tmb Tgo Tl	81	+25.0	2- 8-55	F	S	75	..	...	Casing: 4-in. to 323 ft.; none below. Measured flow 150 gpm on 4-3-57. Electric log in files of U.S. Geol. Survey.
V-23	Cora Pennington	....	B	23.6	1¼	Qt	109	10.0	8-13-56	P	D	70	11	31	
V-24	....	....	Dr	24.5	1¼	Qt	73	11.5	5-19-55	..	...	..	..	...	
V-25	James Harrington	-- Wooten	D	210	2	Tc	81	....	......	F	S	67	0	80	Measured flow 3.5 gpm on 12-15-54.
V-26	....do	....do	D	460	4	Tg Tm To	81	+ 6.0	12-14-54	F	S	71	0	94	Measured flow 3.3 gpm on 12-14-54.
*V-27	Leroy Whitten	Marcus Blair	D	460	4,3	Tg Tm To	79	+37.7	12-14-54	F	Irr, D	72	0	96	Casing: 4-in. to 300 ft.; 3-in. from 300 to 350 ft.; none below. Measured flow 85 gpm on 12-14-54.
V-28	Tom Bridges	-- Hostedder	D	487	2	Tg Tm To	79	+11.0	12-14-54	F	D	..	..	...	
V-29	W. B. Peavy	O. W. Findley	D	30	2	Qt	...	18	1951	J	D	..	2	8	Casing and screen: 2-in. to 30 ft. Water reported to be high in iron content.
V-30	S. S. Thompson	S. S. Thompson	B	22.2	1¼	Qt	86	14.3	5-19-55	P	N	67	4	6	Water reported to be high in iron content.
V-31	Tom Travis	Tom Travis	Dr	26	1¼	Tmu	...	....	......	P	D,S	..	8	20	
V-32	Dixon Travis	....	..	...	2	Tmu	...	....	......	Cy	D	69	0	5	
V-33	W. L. Gillis	....	D	...	2	Tmu	198	....	......	J	D,S	..	1	11	
V-34	W. F. Glidden	....	D	...	2	Tmu	171	....	......	J	D	..	..	...	
V-35	Will Harris	....	Dr	...	1¼	Qt	...	....	......	P	D	68	11	20	

V-36	Leroy Whitten	Marcus Blair	D	710.0	4	Tg Tm To Ty Tmb Tgo Tl	87	+37.0	4- 3-57	F	Irr, D	73	18	120	Casing: 4-in. to 345 ft.; none below. Measured flow 85.0 gpm on 3-20-56. Electric log in files of U.S. Geol. Survey. See driller's log.
V-37	City of Brewton . . .	. . . .	D	435.0	4	Tg Tm To	94	+30.7	4- 6-57	F	N	73	7	106	Casing: 4-in. to 385 ft.; none below. Measured flow 44.3 gpm on 4-7-57. Electric log in files of U.S. Geol. Survey.
V-38	Henry Thompson. . .	Henry Thompson. . . .	Dr	24.7	1¼	Qt	88	9.3	5- 2-55	P	D	68	. .	. . .	
V-39	W. E. Townsend. . .	-- Hostedder	D	445	4, 2	Tm To	78	+40	1945	F	S	. .	. .	. . .	Casing: 4-in. from surface to 220 ft.; 2-in. from surface to 445 ft. Reported flow 125.0 gpm in 1945. Reported flow at depth of 210 ft. was cased off.
V-40	George Brantley . . .	. . . .	. .	15	1¼	Qt	. . .	. . . .	. . . . . .	C	D	. .	2	8	
V-41	. . . . do	George Brantley	B	15	1¼	Qt	. . .	. . . .	. . . . . .	C	D,S	. .	2	11	Casing: 1¼-in. to 12.5 ft.; 1¼-in. screen from 12.5 to 15 ft.
*V-42	. . . . do	Cates Drilling Co . . .	D	486.0	3	Tg Tm To	76	. . . .	10-19-51	F	N	68	. .	. . .	Casing: 3-in. to 375 ft.; none below. Electric log in files of U.S. Geol. Survey.
V-43	Ira Harris	Ira Harris	B	21.3	1¼	Qt	81	11.9	5-20-55	P	D	66	0	5	
V-44	Minnie Carroll	Clyde Carroll.	B	19.7	1¼	Qt	80	11.4	5-20-55	P	N	. .	. .	. . .	
V-45	R. L. Wiggins	. . . .	B	27.7	1¼	Qt	81	2.8	6- 2-55	P	D	66	2	6	
V-46	A. Lee James	. . . .	D	62	2	Tmu	81	. . . .	. . . . . .	J	D	69	1	5	Casing and screen: 2-in. to 62 ft.
V-47	L. C. Harris	. . . .	D	64	2	Tmu	. . .	56	1950	J	D,S	68	0	6	Casing and screen: 2-in. to 64 ft.
V-48	Y. C. Odom.	Etheridge Plumbing Co.	D	235	2	Tc (?)	186	129	1955	Cy	D,S	. .	0	116	Casing: 2-in. to 225 ft.; 2-in. screen from 225 to 235 ft. See driller's log.
V-49	E. J. Dixon.	C. O'Farrell	D	55	2	Tmu	. . .	. . . .	. . . . . .	J	D	. .	1	7	
V-50	-- Dozier	O. W. Findley	D	80	2	Tmu	. . .	. . . .	. . . . . .	Cy	S	68	1	11	Casing and screen: 2-in. to 80 ft.
V-51	Claude Thomas. . . .	Claude Thomas.	D	32	2	Tmu	174	26	1945	C	D,S	. .	1	8	Casing: 2-in. to 27 ft.; 2-in. screen from 27 to 32 ft.
V-52	Helen Morrell	. . . .	D	102	2	Tmu	229	72	1955	. .	D	. .	. .	. . .	Casing: 2-in. to 96 ft.; 2-in. screen from 96 to 102 ft.
V-53	E. Thomas	E. Thomas	B	30	1¼	Tmu	. . .	. . . .	. . . . . .	P	D,S	. .	2	14	Casing: 1¼-in. to 27 ft.; 1¼-in. screen from 27 to 30 ft.
V-54	. . . . do	Hubert Thomas.	B	32	1¼	Tmu	188	16	1947	Cy	D,S	68	2	8	Casing: 1¼-in. to 29 ft.; 1¼-in. screen from 29 to 32 ft.
V-55	J. W. Capps	Etheridge Plumbing Co.	D	90	2	Tmu	174	. . . .	. . . . . .	J	D	69	. .	. . .	Casing: 2-in. to 85 ft.; 2-in. screen from 85 to 90 ft. See driller's log of test well drilled to 140 ft.

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as CaCO3 (ppm)	
V-56	J. D. Travis, Sr . .	. . . .	D	37	2	Tmu	184	. . . .	. . . . . .	Cy	D,S	69	2	6	
V-57	J. D. Travis	J. D. Travis	. .	47	2	Tmu	. . .	. . . .	. . . . . .	J	D,S	71	2	9	
V-58	J. L. Calvert	J. L. Calvert.	. .	46	2	Tmu	. . .	. . . .	. . . . . .	J	D	. .	0	5	Casing: 2-in. to 43 ft.; 2-in. screen from 43 to 46 ft.
V-59	C. Y. Dixon.	. . . .	. .	65	. .	Tmu	. . .	45	. . . . . .	. .	D,S	. .	1	3	
V-60	E. Thompson.	. . . .	. .	. . .	2	Tmu	. . .	. . . .	. . . . . .	J	D,S	. .	0	6	
V-61	Horace Harrelson. .	. . . .	. .	31.2	1½	Tmu	200	25.0	10-29-56	P	N	. .	. .	. . .	
V-62	. . . .	. . . .	. .	. . .	2	Tmu	. . .	. . . .	. . . . . .	J	D	. .	1	6	
V-63	Will Harris	. . . .	Dr	19.1	1¼	Tmu	. . .	15.0	5-27-55	P	N	. .	. .	. . .	
V-64	Jim Thomas.	. . . .	D	82	2	Tmu	. . .	62	1950	J	D	. .	0	7	Casing: 2-in. to 78 ft.; 2-in. screen from 78 to 82 ft.
V-65	W. D. Douglas. . . .	C. O'Farrell	B	65	12,2	Tmu	. . .	56	2- -55	J	D,S	. .	2	5	
V-66	John W. Day	Will O'Farrell	B	48.7	8	Tmu	. . .	43.0	6- 2-55	M	D,S	69	1	5	
V-67	T. R. Huff.	D. C. Trautman. . . .	D	100	2	Tmu	277	. . . .	. . . . . .	Cy	D,S	. .	6	22	Casing: 2-in. to 97 ft.; 2-in. screen from 97 to 100 ft.
V-68	W. H. Brantley . . .	W. H. Brantley	D	82	2	Tci	265	67	1946	Cy	D,S	. .	2	10	Casing: 2-in. to 78 ft.; 2-in. screen from 78 to 82 ft.
*V-69	Lake Golden.	W. Warrick.	D	130	2	Tci	277	100	. . . . . .	Cy	D,S	70	. .	. . .	Casing and screen: 2-in. to 130 ft. Water leaves iron stain.
V-70	. . . . do.	. . . .	. .	29.3	1¼	Tci	. . .	. . . .	. . . . . .	. .	N	. .	. .	. . .	Dry on 4-29-55.
V-71	. . . .	. . . .	. .	. . .	. .	Tci	280	. . . .	. . . . . .	Cy	D	. .	. .	. . .	
V-72	N. H. Jones.	. . . .	Du	25	36	Tci	. . .	. . . .	. . . . . .	Cy	D	. .	1	9	Low in dry weather.
V-73	Rufus McNaughton. .	. . . .	D	125	. .	Tci	284	. . . .	. . . . . .	Cy	D,S	. .	1	9	
V-74	T. C. Dixon.	. . . .	Dr	26	1¼	Tci	294	23	. . . . . .	C	D,S	. .	3	13	Casing and screen: 1¼-in. to 26 ft.
V-75	J. C. Keck	. . . .	D	105	2	Tci	. . .	45	. . . . . .	J	D	. .	1	5	

V-76	W. Martin and P. Shelly.	O. W. Findley	D	68	2	Tci	. . .	40	. . . .	J	D,S	. .	1	7	Casing and screen: 2-in. to 68 ft.
V-77	Paul Z. Shelly	. . . .	D	61	4	Tci	279	41.0	. . . .	J	D,S	. .	1	6	Casing: 4-in. to 56 ft.; 2-in. screen from 56 to 61 ft.
W- 1	E. E. Liles	. . . .	D	. . .	3	. . .	. . .	. . . .	. . . .	F	D	. .	11	128	
W- 2	Albert Miller	Marcus Blair	D	175.0	2	Tmu	87	+ 4.7	5-15-56	F,J	D	68	11	104	Casing: 2-in. to 169 ft.; 2-in. screen from 169 to 175 ft. Measured flow 1.0 gpm on 5-15-56. Pumped at 10.0 gpm. See driller's log.
W- 3	Bonnie Beach Presbyterian Center.	Etheridge Plumbing Co.	D	130.0	3½	Tmu	92	. . . .	. . . .	. .	P	. .	. .	. . .	
W- 4	Container Corporation of America	Layne-Central Co. . .	D	485	18, 12,8	Tmu Tg Tm To	108	1.8	7- 9-56	T	Ind	. .	. .	. . .	Casing: 18-in. to 160 ft.; 12-in. from 100 to 168 ft.; 8-in. from 208 to 395 ft., 415 to 455 ft., and 475 to 495 ft.; 8-in. screen from 168 to 208 ft., 395 to 415 ft., and 455 to 475 ft. Measured drawdown 105.5 ft. after 24 hours pumping 450 gpm on 7-9-56. Test hole drilled to depth of 1,054 ft. See driller's log. Electric log in files of U.S. Geol. Survey.
W- 5	Cravers Funeral Home.	Holland Drilling Co.	D	256	4	Tmu	125	46.1	2-22-57	J	Ind	68	7	72	Casing: 4-in. to 241 ft.; 4-in. screen from 241 to 256 ft. Pumped at 43.0 gpm. See driller's log.
W- 6	W. W. Jernigan . . .	W. W. Jernigan	B	40	8	Tmu	108	35.0	3-31-55	M	D	69	1	6	
W- 7	Edith Jernigan	-- Wooten	D	475	4	Tg Tm To	111	11	. . . .	J	D	. .	1	132	
W- 8	J. J. Goneke	J. J. Goneke	D	25	1¼	Tmu	136	. . . .	. . . .	P	D	. .	. .	. . .	Casing: 1¼-in. to 22 ft.; 1¼-in. screen from 22 to 25 ft.
W- 9	T. A. Wilson	T. A. Wilson	Dr	25	1¼	Tmu	134	. . . .	. . . .	C	D	65	1	8	Do.
W-10	Pete Bryant	. . . .	. .	. . .	2	Tmu	138	. . . .	. . . .	J	D	. .	1	7	
W-11	J. R. Wilson	. . . .	D	100	2	Tci	206	. . . .	. . . .	J	D	. .	0	4	
W-12	L. A. Snyder	Irving Carnley	D	47	2	Tci	213	30	1955	J	D	. .	. .	. . .	Casing: 2-in. to 42 ft.; 2-in. screen from 42 to 47 ft.
W-13	L. G. Snyder	O. W. Findley	D	56	2	Tci	230	46	1952	J	D,S	. .	0	4	Casing: 2-in. to 52 ft.; 2-in. screen from 52 to 56 ft.
W-14	. . . . do	Dan Jordan	D	62	2	Tci	246	52	1952	J	D	. .	1	4	Casing: 2-in. to 58 ft.; 2-in. screen from 58 to 62 ft.
W-15	. . . . do	O. W. Findley	D	73	2	Tci	250	. . . .	. . . .	J	D	. .	1	4	Casing: 2-in. to 69 ft.; 2-in. screen from 69 to 73 ft.
W-16	John W. Gibson . . .	Irving Carnley	D	44	2	Tci	185	34	1953	Cy	D,S	. .	1	6	
W-17	J. L. Rigby	. . . . do	D	66	2	Tci	198	45	1952	J	D	. .	1	7	Casing: 2-in. to 61 ft.; 2-in. screen from 61 to 66 ft.

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level: Above (+) or below land surface (feet)	Water level: Date of measurement	Method of lift	Use of water	Field determinations: Temperature (° F)	Field determinations: Chloride (Cl) (ppm)	Field determinations: Hardness as CaCO3 (ppm)	Remarks
W-18	Lavon Brooks.	. . . .	D	52	2	Tci	208	44	. . . . . .	C	D	70	0	6	
W-19	Joe Jackson.	Etheridge Plumbing Co.	D	123	2	Tmu	. . .	. . . .	. . . . . .	Cy	D, S	. .	11	9	See driller's log.
W-20	E. E. Jackson	White Brothers.	B	27.4	8	Tci	215	19.6	1-20-56	M	D	. .	. .	52	
*W-21	L. P. Jackson	Etheridge Plumbing Co.	D	240	2	Tmu	232	. . . .	. . . . . .	Cy	D	. .	. .	. . .	Do.
W-22	John H. Jackson . . .	White Brothers.	D	19.6	1¼	Tci	209	17.1	1-20-56	P	D	68	11	35	
W-23	Charles Jackson . . .	Flo Drilling Co.	D	88	2	Tmu	206	. . . .	. . . . . .	J	D	. .	. .	. . .	See driller's log of test well drilled to 273 ft.
W-24	J. M. Herrington . .	. . . .	. .	32	1¼	Tci	. . .	22	1940	P	D	. .	11	22	
W-25	C. A. Rowell	Etheridge Plumbing Co.	. .	240	2	Tmu	200	140	1954	Cy	D	. .	0	12	See driller's log.
W-26	Denard Lambeth . . .	J. B. Ellis	D	80	2	Tci	238	. . . .	. . . . . .	J	D, S	. .	6	6	Supplies 200 hogs and 30 cows.
W-27	A. M. Gatwood. . . .	Irving Carnley	D	98	2	Tci	239	70	1956	Cy	D	69	4	8	Casing and screen: 2-in. to 98 ft.
W-28	G. A. Carter	D. C. Trautman	D	50	2	Tci	212	. . . .	. . . . . .	Cy	D, S	. .	11	29	
W-29	J. J. Thompson . . .	. . . .	D	45	2	Tci	. . .	. . . .	. . . . . .	J	D, S	. .	4	7	Casing: 2-in. to 40 ft.; 2-in. screen from 40 to 45 ft.
W-30	J. W. Teel	Irving Carnley	D	81	2	Tci	185	. . . .	. . . . . .	Cy	D	. .	11	10	
W-31	Brooks Jackson . . .	Etheridge Plumbing Co.	D	230	2	Tmu	220	. . . .	. . . . . .	Cy	D	68	4	13	
W-32	Escambia County Board of Education.	Gray Artesian Well Co.	D	660	6, 4	Tgo (?)	182	80	1953	Cy	P	. .	2	108	Casing: 6-in. to 400 ft.; 4-in. from 400 to 640 ft.; 4-in. screen from 640 to 660 ft. Reported to be pumped at 18 gpm.
W-33	Glenn Bailey	Etheridge Plumbing Co.	D	62	2	Tmu	. . .	44	1954	J	D	. .	. .	. . .	See driller's log.
W-34	Thelma Smith.	. . . . do	D	83	2	Tmu	. . .	. . . .	. . . . . .	J	D	. .	2	6	Do.
W-35	Noel Tedder.	Noel Tedder.	. .	17	1¼	Tci	. . .	. . . .	. . . . . .	C	D, S	. .	2	17	

W-36	T. M. Williamson. .	T. M. Williamson. . .	D	20	. .	Tcl	. . .	. . . .	. . . . . .	J	D	. .	1	8	
W-37	C. C. Bird	C. C. Bird	. .	20	. .	Tcl	. . .	. . . .	. . . . . .	P	D,S	. .	4	10	
W-38	A. D. Hale.	. . . .	. .	11	. .	Tcl	. . .	7	. . . . . .	P	D,S	. .	4	11	
W-39	B. M. Franklin . . .	B. M. Franklin	D	18	1¼	Tcl	. . .	. . . .	. . . . . .	P	D	. .	0	3	
W-40	Buford Jernigan . . .	Watson Hardware Co.	D	23	1¼	Tcl	. . .	. . . .	. . . . . .	P	D	. .	8	21	
W-41	Arthur Chavers . . .	Etheridge Plumbing Co.	D	180	2	Tmu	132	60	11-15-55	J	D	. .	4	66	Do.
W-42	. . . . do	. . . .	. .	19.0	1¼	Tcl	132	5.0	3-16-57	P	N	70	2	48	
W-43	Kathleen Chavers . .	A. J. Jackson	. .	15	1¼	Tcl	. . .	11	1945	P	D	. .	21	18	Casing: 1¼-in. to 12 ft.; 1¼-in. screen from 12 to 15 ft.
W-44	I. H. Taylor	. . . .	. .	19	1¼	Tcl	. . .	12	1954	Cy	D,S	. .	2	9	
W-45	A. H. Godwin, Jr. .	. . . .	. .	21	1¼	Tcl	. . .	12	1953	P	D	. .	0	10	
W-46	Robert W. Segrest .	Etheridge Plumbing Co.	D	120	2	Tmu	147	. . . .	. . . . . .	J	D	. .	1	38	Casing: 2-in. to 115 ft.; 2-in. screen from 115 to 120 ft. See driller's log.
W-47	J. W. Caldwell. . . .	. . . . do	D	36	2	Tcl	. . .	28	1950	J	D	. .	. .	. . .	
W-48	M. P. Craver	Flo Drilling Co.	D	33.0	2	Tcl	171	16.1	11-19-56	J	D	. .	. .	. . .	Casing: 2-in. to 29 ft.; 2-in. screen from 29 to 33 ft.
W-49	G. N. Jernigan. . . .	G. N. Jernigan.	D	25	1¼	Tcl	. . .	19	. . . . . .	Cy	D,S	. .	. .	. . .	
W-50	J. W. Jernigan, Jr.	Etheridge Plumbing Co.	D	195.0	4,2	Tmu	211	131	4-28-55	Cy	D	. .	. .	. . .	Casing: 4-in. to 76 ft.; 2-in. from 76 to 185 ft.; 2-in. screen from 185 to 195 ft.
*W-51	Raymond Mize	Marcus Blair.	D	555	4	Tg Tm To	141	5	3- -55	J	D	68	. .	. . .	Casing: 4-in. to 500 ft.; none below.
W-52	B. L. Martin.	Etheridge Plumbing Co.	D	105	2½	Tmu	73	. . . .	. . . . . .	F	S	66	0	74	Measured flow 11 gpm on 4-6-55.
W-53	W. A. Franklin . . .	W. A. Franklin	D	23	1¼	Tmu	136	. . . .	. . . . . .	Cy	D	. .	1	11	Casing and screen: 1¼-in. to 23 ft.
W-54	Edwin Franklin. . . .	O. W. Findley	D	80	2	Tmu	107	48	1951	J	D	. .	0	7	Casing: 2-in. to 75 ft.; 2-in. screen from 75 to 80 ft.
W-55	. . . . do	. . . . do	D	40	2	Tmu	99	. . . .	. . . . . .	Cy	D	67	1	20	Casing and screen: 2-in. to 40 ft. Water reported to be high in iron content.
W-56	C. V. Moye.	. . . .	D	67	2	Tmu	103	20	4- -52	J	D	68	1	8	Casing: 2-in. to 62 ft.; 2-in. screen from 62 to 67 ft.
W-57	D. L. Caldwell. . . .	C. Holland.	D	62	2	Tmu	105	53	1954	P	D	67	1	8	
W-58	Hines Realty Co . . .	. . . .	D	246.8	4	Tc (?)	103	14.9	5-16-57	C	D	. .	1	110	
W-59	B. L. Martin.	Etheridge Plumbing Co.	D	120	2½	Tmu	72	+ 8.9	4- 6-55	. .	D	67	0	77	Measured flow 8.9 gpm on 4-6-55.
W-60	Cosby Hayes	Leon Martin.	. .	20	1¼	Qt	. . .	. . . .	. . . . . .	Cy	D	. .	16	36	

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as CaCO3 (ppm)	
W-61	J. J. Godwin	J. J. Godwin	..	25	1¼	Tci	...	18	......	J	D	..	18	40	
W-62	Ned Hale	Ned Hale	D	22	1¼	Tci	...	....	......	P	D,S	..	..	8	Casing: 1¼-in. to 19 ft.; 1¼-in. screen from 19 to 22 ft.
W-63	Walter Lowry	Etheridge Plumbing Co.	D	225	2	Tmu	142	90	......	P	D	..	2	106	See driller's log.
W-64	J. W. Teel	J. W. Teel	..	25	2	Tci	...	19	......	J	D,S	..	7	5	
W-65	J. L. Jernigan, Jr.	Etheridge Plumbing Co.	D	510	4	Tg (?)	122	35	......	J	D	..	4	82	Do.
W-66	W. E. Jones	W. E. Jones	..	23	1¼	Qt	...	....	......	P	D	..	..	...	
W-67	L. M. Congleton	-- Watson	..	30	1¼	Tci	...	....	......	P	D	..	11	16	
W-68	G. A. Carter	....	B	36.0	8	Tci	...	34.0	1-23-56	M	D	..	..	...	
W-69	A. W. Moye	Spillers Well and Pump Co.	D	60	2	Tci	...	30	1951	Cy	D,S	..	11	24	
W-70	....do	Tom Murphy	D	67	2	Tci	...	55	......	Cy	D,S	..	11	12	Casing: 2-in. to 62 ft.; 2-in. screen from 62 to 67 ft.
W-71	A. J. Lister	Etheridge Plumbing Co.	D	280	2	Tmu	...	200	1955	Cy	D,S	..	7	38	See driller's log. Water reported to be high in iron content.
W-72	Lamar Godwin	....	..	57	2	Tci	...	....	......	Cy	D	..	7	9	
W-73	E. L. Godwin	-- Holland	D	52	2	Tci	...	42	1954	C	D,S	..	14	8	
W-74	Callie Lambeth	Harvey White	D	22	2	Qt	...	10	1947	..	D,S	..	36	29	
W-75	I. B. Chavers	....	..	18.1	2	Qt	...	15.0	11-28-56	J	D	..	..	...	
W-76	Leona Johnson	....	..	33	2	Qt	...	29	1955	J	D	..	..	...	
W-77	J. H. Brantley	Etheridge Plumbing Co.	D	160	2	Tmu	170	....	......	Cy	D	..	7	42	Casing: 2-in. to 155 ft.; 2-in. screen from 155 to 160 ft. See driller's log.
W-78	E. Nowling	....do	D	220	2	Tmu	174	....	......	Cy	D,S	..	..	...	Casing: 2-in. to 215 ft.; 2-in. screen from 215 to 220 ft. See driller's log.

W-79	P. J. Doucet	do	D	80	2	Tmu	...	....	......	J	D,S	..	7	13	
W-80	Alvin Brantley	do	D	107	2	Tmu	169	....	......	P	D	..	0	22	Casing: 2-in. to 102 ft.; 2-in. screen from 102 to 107 ft.
W-81	Gus Turner	do	D	212	..	Tmu	171	112	1954	Cy	D,S	..	0	32	See driller's log. Water reported to be high in iron content.
W-82	Martin Powell		..	...	..	Qt	...	....	......	Cy	D	..	43	22	
W-83	H. L. Smith		..	33	2	Qt	...	....	......	Cy	D	..	11	8	
W-84	J. T. Butler		..	18.3	4	Qt	...	16.3	12-29-55	J	D,S	..	21	14	
W-85	Bert Turner	Etheridge Plumbing Co.	D	173	2	Tmu	151	....	......	Cy	D,S	..	11	93	See driller's log.
W-86	G. Newton	do	D	181	2	Tmu	155	....	......	Cy	D	..	11	54	
W-87	C. T. Powell		..	26.9	1¼	Qt	134	11.3	12-29-55	P	D	..	..	...	
W-88	do	C. T. Powell	..	26	..	Qt	133	....	......	P	D,S	..	7	18	
W-89	do		D	108.5	2	Tmu	133	33.0	1-24-56	..	N	..	..	...	
W-90	E. L. Nowling	Gay Jordon	D	17.5	1¼	Qt	134	8.4	1-24-56	P	D	..	11	17	
W-91	G. E. Newton	White Brothers	D	35	..	Tmu	...	....	......	Cy	N	..	7	48	
W-92	Tom Walton	do	D	23.5	1¼	Qt	115	20.2	1-24-56	P	D,S	..	14	34	
W-93	Findley Estate	do	J	130	2	Tmu	109	39	2-16-55	J	S	..	..	...	Casing: 2-in. to 126 ft.; 2-in. screen from 126 to 130 ft.
W-94	J. A. Jernigan		..	45	2	Tmu	...	....	......	J	...	..	..	...	
W-95	A. T. Williams		D	300	..	Tmu	67	+11.0	2-10-55	F	D	68	1	88	Measured flow 2.9 gpm on 2-10-55.
W-96	B. H. Scroggins	B. H. Scroggins	D	100	1¼	Tmu	65	....	2-10-55	F	D	68	..	52	Flows less than 1 gpm.
W-97	A. C. Congleton	C. Holland	D	100.0	2½	Tmu	65	.26	3-19-57	..	N	..	..	...	
*W-98	do	Etheridge Plumbing Co.	D	310.0	2½	Tmu	65	+13.3	3-19-57	F	D	70	..	...	Casing: 2½-in. to 290 ft.; 2½-in. screen from 290 to 310 ft. Measured flow 5.0 gpm on 2-1-55. See driller's log.
W-99	Pollard Holiness Church.		..	29.0	1¼	Qt	63	3.7	3-19-57	P	N	..	..	...	
W-100	Lucy Carden		D	23.7	1¼	Qt	...	17.0	8-17-56	P	D	..	..	...	
W-101	Ed Leigh McMillan		..	....	1¼	Tmu	65	....	......	F	N	68	1	73	Measured flow 2.5 gpm on 2-9-55.
W-102	Gertrude Kelly		..	100	1¼	Tmu	65	+ 1.9	2- 7-55	F	D	68	1	64	
W-103	Lillie Tippins		..	...	1½	Tmu	65	+ 3.3	2- 7-55	F	D	68	1	69	Measured flow 1.3 gpm on 2-7-55.
W-104	J. W. Kelly Estate	Etheridge Plumbing Co.	D	105	2	Tmu	65	....	......	F	D	68	0	66	Casing: 2-in. to 100 ft.; 2-in. screen from 100 to 105 ft. Test hole drilled to 140 ft.

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as CaCO3 (ppm)	
W-105	B. H. Scroggins . . .	. . . .	. .	105	1¼	Tmu	65	+ 2.5	2-10-55	F	D	68	. .	55	Measured flow 1.7 gpm on 2-10-55.
W-106	Rufus J. Odom	. . . .	. .	100	1¼	Tmu	65	+ 1.7	2- 7-55	F	D	68	2	58	Measured flow 1.7 gpm on 2-7-55.
W-107	J. T. Pringle.	. . . .	. .	. . .	3	Tmu	65	+ 5.2	2- 9-55	F	D	67	0	81	Measured flow 7 gpm on 2-9-55.
W-108	Findley Estate	. . . .	. .	22.5	1¼	Tmu	65	9.4	2-10-55	P	N	. .	. .	. . .	
W-109	Town of Pollard . . .	. . . .	D	600	8	Tg Tm To	65	+64.5	2-10-55	F	P	72	4	51	Flow could not be measured. Supplies several families.
*W-110	E. T. Arrant.	Fred Arrant.	. .	74	1¼	Tmu	61	+ 5.8	2-11-55	F	D	68	. .	. . .	Measured flow 10.7 gpm on 2-11-55.
W-111	W. J. Arrant.	W. J. Arrant.	. .	76	1¼	Tmu	66	+ 2.7	2-10-55	F	D	68	1	70	Measured flow 7.5 gpm on 2-10-55.
W-112	C. W. Arrant.	C. W. Arrant.	. .	165	1½	Tmu	66	+ 1.8	2-11-55	F	D	67	1	89	Flow less than 1 gpm on 2-11-55.
W-113	. . . . do	. . . .	. .	41.5	1¼	Tmu	66	1.0	2-11-55	C	D	. .	. .	. . .	
W-114	Edith Tolliver	. . . .	. .	28.6	1¼	Qt	66	8.7	3- 2-55	P	D	68	4	8	
W-115	Stella Walker.	. . . .	. .	35	2	Tmu	69	15	. . . . . .	P	D	. .	4	14	Casing and screen: 2-in. to 35 ft.
W-116	Leigh Williams. . . .	. . . .	. .	. . .	2½	Tmu	69	+15.7	2-11-55	F	D	71	2	62	Measured flow 8.0 gpm on 2-11-55.
W-117	Grady Carden.	D. Elliott	D	52	2	Tmu	. . .	41	5- -55	J	D	. .	2	5	Casing: 2-in. to 49 ft.; 2-in. screen from 49 to 52 ft.
W-118	Methodist Church . .	. . . .	. .	. . .	1¼	Tmu	64	+ 1.0	2- 9-55	F	N	67	0	38	Measured flow 1.5 gpm on 2-9-55.
*W-119	G. S. Vinson	. . . .	. .	163.0	1¼	Tmu	65	+ 1.1	2-10-55	C, F	D	69	. .	. . .	
W-120	Queen Dunn	. . . .	. .	95.0	1¼	Tmu	64	+ 2.9	2- 9-55	C, F	D	67	0	48	Measured flow 2.5 gpm on 2-9-55.
W-121	L. J. Baggett.	L. J. Baggett.	. .	20.3	1¼	Qt	65	14.0	2- 9-55	P	D	65	0	5	
W-122	Bessie Fitzgerald. .	. . . .	. .	100	2	Tmu	65	+ 1.7	2- 9-55	F	N	69	0	49	Flow less than 1 gpm on 2-9-55. Leaks around casing.
W-123	W. A. Adams.	. . . .	. .	68.0	1¼	Tmu	65	+ 2.0	2- 8-55	C, F	D	68	1	46	Estimated flow 2 gpm on 2-8-55.
W-124	Rufus White	. . . .	. .	85	1¼	Tmu	65	+ 2.0	2- 8-55	F	N	68	2	68	Measured flow 1 gpm on 2-8-55.

W-125	Ellen Kelly	....	..	105	1¼	Tmu	65	+ 3.3	2- 9-55	C, F	D	68	1	68	Measured flow 1.7 gpm on 2-9-55.
*W-126	J. L. Jernigan	....	..	800	8	Tg Tm To Ty Tmb Tgo Tl (?)	62	+57.0	2-10-55	F	P	74	..	...	
W-127	Archie Odom	....	..	94.0	1¼	Tmu	65	+ 3.2	2- 8-55	F	N	68	1	65	Measured flow 5.0 gpm on 2-8-55.
W-128	J. G. Kelly	....	..	100	1¼	Tmu	65	+ 2.2	2- 8-55	F	N	67	..	66	Flow less than 1 gpm on 2-8-55.
W-129	St. Peter Baptist Church.	....	..	19.3	1¼	Qt	65	14.0	2- 9-55	C	D	..	..	...	
W-130	Alonzo Samuals	....	..	28	1¼	Qt	65	25	......	C	D	..	1	6	Casing: 1¼-in. to 25 ft.; 1¼-in. screen from 25 to 28 ft.
W-131	Lelah Sowell	Charlie Sowell	..	65	1¼	Tmu	62	+ 3.0	2- 9-55	F	D	..	1	52	Leaks around casing.
W-132	Escambia County Board of Education	Etheridge Plumbing Co.	D	100	4	Tmu	61	+10.1	5-10-57	F	P	..	..	...	Measured flow 60.0 gpm on 5-10-57. Supplies school.
W-133	Thomas Monroe	....	..	48	1¼	Tmu	...	15	......	P	D	67	11	16	
W-134	W. B. Husky	....	..	200	1¼	Tmu	62	+ 4.3	2-11-55	C, F	D	69	4	49	Measured flow 5.0 gpm on 2-11-55.
W-135	....do	....	..	46.0	..	Tmu	59	....	......	..	..	..	..	...	
W-136	Troy Brannon	Etheridge Plumbing Co.	D	420	..	...	...	....	......	..	C	..	..	...	Test hole. See driller's log.
W-137	R. C. Carden	R. C. Carden	Dr	22	1¼	Qt	...	10	1947	C	D	..	0	7	Casing: 1¼-in. to 19 ft.; 1¼-in. screen from 19 to 22 ft.
W-138	O. H. Carden	H. Barrentine	D	23	2	Qt	...	....	......	P	D	..	1	19	Casing: 2-in. to 19 ft.; 2-in. screen from 19 to 23 ft.
W-139	E. Martin	....	B	60	8	Tmu	...	....	......	J	P	..	9	15	Supplies cafe and motel.
W-140	H. C. Barnes	Etheridge Plumbing Co.	D	157	3	Tmu	110	....	......	J	P	..	1	92	Casing: 3-in. to 147 ft.; 3-in. screen from 147 to 157 ft. See driller's log. Supplies motel.
W-141	....do	H. C. Barnes	D	138	2	Tmu	112	18	1950	J	Irr	..	..	...	Casing and screen: 2-in. to 138 ft.
W-142	Ellis Graves	....	..	16.5	1¼	Qt	113	13.6	12-29-55	P	D	..	35	34	
W-143	Charles Lambeth	C. Holland	D	100	..	Tmu	107	....	......	J	D	..	11	82	
W-144	C. A. Reaves	A. McCurdy	B	56	6	Tmu	131	....	......	J	D, S	..	2	7	
W-145	Jess McCurdy	....	..	...	6	Tmu	183	....	......	Cy	D	69	..	7	
X- 1	E. L. Golden	Etheridge Plumbing Co.	D	80	2	Tci	252	70	1952	Cy	D	..	0	13	Casing: 2-in. to 75 ft.; 2-in. screen from 75 to 80 ft. See driller's log.
X- 2	J. B. Golden	C. Holland	D	103	2	Tci	245	86	1953	Cy	D, S	..	5	10	

Table 4.–*Records of wells in Escambia County, Ala.*–Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
X- 3	W. R. Macks.....	Etheridge Plumbing Co.	D	90	2	Tci	...	71	1951	Cy	D	..	1	7	
X- 4	A. L. Morris.....	....	D	...	2	Tci	...	....	......	J	D,S	..	..	...	
X- 5	R. A. Smith......	....	Dr	20.2	1½	Tci	...	11.7	3-20-56	P	D	..	..	...	
X- 6	James Boutwell ...	....	D	35	2	Tci	...	....	......	J	D	..	18	38	
X- 7	Burnace Lambeth ..	Etheridge Plumbing Co.	D	60	2½	Tci	243	....	......	J	D	..	..	...	
X- 8	H. Boutwell......	H. Boutwell.......	B	46	8	Tci	...	41.0	2- 7-56	M	D,S	..	..	...	
X- 9	Sidney Boutwell ...	Etheridge Plumbing Co.	D	70	2	Tci	236	....	......	J	D	..	..	...	Casing: 2-in. to 65 ft.; 2-in. screen from 65 to 70 ft. See driller's log.
X-10	C. G. Boutwell....	.....do.........	D	...	2	Tci	232	....	......	Cy	D,S	..	..	...	
X-11	T. M. Lambeth ...	T. M. Lambeth	Du	28	8	Tci	229	20.9	2- 7-56	P	D,S	..	..	...	
X-12	S. M. Burkett	Etheridge Plumbing Co.	D	88	2	Tci	216	....	......	Cy	D	..	..	...	Casing: 2-in. to 83 ft.; 2-in. screen from 83 to 88 ft. See driller's log.
X-13	F. W. Lambeth ...	....	B	65	..	Tci	197	30	1944	J	D,S	..	..	15	
X-14	Jeff Emmons	Etheridge Plumbing Co.	D	105	2	Tci	250	....	......	Cy	D	..	..	10	
X-15	F. J. Knowles	....	B	60	8	Tci	...	54.8	3-26-56	M	D	..	..	...	
X-16	.....do........	Etheridge Plumbing Co.	D	74	2½	Tci	244	....	......	Cy	D,S	..	..	...	See driller's log.
X-17	S. E. Emmons....	S. E. Emmons.....	J	65.0	8	Tci	255	83.2	2- 8-56	M	D,S	..	..	...	
X-18	.....do........	Etheridge Plumbing Co.	D	100	2	Tci	...	....	......	Cy	D,S	..	..	...	Casing: 2-in. to 95 ft.; 2-in. screen from 95 to 100 ft. See driller's log.
X-19	J. B. Golden	.....do.........	D	128	4	Tci	...	99	2- -55	J	Irr	..	1	8	Casing: 4-in. to 98 ft.; 4-in. screen from 98 to 128 ft. See driller's log.
X-20	C. Majors.......	.....do.........	D	84	..	Tci	...	73	1954	J	D	..	2	22	

X-21	Hammoc Estate . . .	. . . .	D	92	2	Tci	. . .	. . . .	. . . . . .	Cy	D	. .	2	24	
X-22	R. S. Hammoc	. . . .	B	65.2	7½	Tci	. . .	62.8	12-15-55	M	D,S	. .	. .	. . .	
X-23	Solomon Hammoc . .	Etheridge Plumbing Co.	D	110	2	Tci	219	. . . .	. . . . . .	Cy	D	. .	0	20	Casing: 2-in. to 105 ft.; 2-in. screen from 105 to 110 ft. See driller's log.
X-24	John Strength	Windham Pump Co . .	D	90	. .	Tci	220	. . . .	. . . . . .	Cy	D,S	68	0	14	
X-25	R. W. Strength. . . .	. . . .	D	84	2	Tci	226	. . . .	. . . . . .	Cy	D,S	. .	2	12	Casing: 2-in. to 79 ft.; 2-in. screen from 79 to 84 ft.
X-26	Virginia Lee Johnson	C. Holland.	D	99	2	Tmu	. . .	59	1952	Cy	D,S	. .	1	10	
X-27	Riley Johnson.	. . . . do	D	100	2	Tmu	. . .	. . . .	. . . . . .	Cy	D,S	. .	1	14	
X-28	Riley McCurdy	. . . .	. .	. . .	. .	Tci	. . .	. . . .	. . . . . .	Cy	D	68	4	8	
X-29	Lorena White	. . . .	. .	27	. .	Tci	. . .	19	1955	C	D	71	25	6	
X-30	J. E. Mize	. . . .	D	51.4	2	Tci	233	46.5	12-28-55	J	D,S	. .	11	14	
X-31	J. A. Knowles	J. A. Knowles	B	23	8	Tmu	. . .	10.1	2- 6-56	J	D,S	. .	. .	. . .	
X-32	I. E. Knowles	I. E. Knowles	B	40	8	Tmu	. . .	16	2- 6-56	P	D	. .	. .	. . .	
X-33	P. M. Lambeth . . .	P. M. Lambeth	B	40	2	Tci	162	29	1955	J	D,S	. .	. .	. . .	
X-34	Aubrey Sapp.	Aubrey Sapp.	Dr	22	1¼	Qt	129	12	. . . . . .	. .	D	. .	11	8	
X-35	S. E. Manning	Gene Godwin	B	22	2	Qt	. . .	16	1955	Cy	D,S	. .	. .	. . .	
X-36	Pony White	. . . .	J	65	. .	Tci	. . .	. . . .	. . . . . .	M	D,S	64	7	16	
*X-37	J. L. Mize	. . . .	D	57	2	Tci	223	. . . .	. . . . . .	J	D,S	. .	14	15	Casing: 2-in. to 52 ft.; 2-in. screen from 52 to 57 ft.
X-38	Allen Henderson . . .	C. Holland.	D	60	2	Tci	. . .	40	. . . . . .	Cy	D,S	. .	7	7	
X-39	W. R. Odom	Etheridge Plumbing Co.	D	65	2	Tci	217	54	1952	J	D,S	. .	11	8	Casing: 2-in. to 60 ft.; 2-in. screen from 60 to 65 ft. See driller's log.
X-40	Jessie Watkins	Windham Pump Co . .	D	65	. .	Tci	. . .	55	1954	J	D	. .	11	20	
X-41	Ernest Emmons . . .	Etheridge Plumbing Co.	D	74.0	4	Tci	229	50.3	5-16-57	J	D	. .	2	12	Observation well. See driller's log.
X-42	-- McCurdy	McCurdy & Odom . . .	D	65	. .	Tci	. . .	54	1953	Cy	D	68	7	9	
X-43	Little Escambia Baptist Church.	Etheridge Plumbing Co.	D	72	2	Tci	226	. . . .	. . . . . .	J	D	. .	2	16	
X-44	F. C. Phillips	Duke Brown	. .	50	2	Tci	. . .	. . . .	. . . . . .	J	D	. .	2	14	
X-45	Gay Jordon	C. Holland.	D	40	2	Tci	. . .	. . . .	. . . . . .	J	D	. .	1	21	
X-46	L. W. Jordon.	Etheridge Plumbing Co.	D	150	. .	Tmu	216	. . . .	. . . . . .	Cy	D	. .	4	77	Casing: 2-in. to 145 ft.; 2-in. screen from 145 to 150 ft. See driller's log.
X-47	Gladys Beasley. . . .	-- Harvey and Joe White.	B	45.1	8	Tci	228	41.0	12-16-55	M	D	. .	. .	. . .	

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
X-48	R. W. Jordon	C. Holland	..	65	..	Tcl	...	....	......	J	D	..	..	...	
X-49	D. E. Jordon	-- Harvey and Joe White.	D	58	..	Tcl	...	....	......	J	D	..	..	...	
X-50	A. R. Coleman	....	..	55	2	Tcl	...	....	......	J	D	..	2	10	
X-51	Todd Ward	Etheridge Plumbing Co.	D	222	2	Tmu	228	172	......	..	D	..	0	16	
X-52	....do	C. Holland	D	117	2	Tmu	243	172	1955	J	D, S	68	2	7	
X-53	Martin Powell	....	D	35	2	Qt	...	25	1954	J	D, S	..	4	6	
X-54	O. A. Fletcher	F. W. Draper	..	55	2	Tmu	...	....	......	P	D	..	3	10	
X-55	Sid McDavid	C. Holland	D	72	2	Tmu	80	27	1955	J	D	70	1	5	Casing: 2-in. to 68 ft.; 2-in. screen from 68 to 72 ft.
X-56	R. J. Bush	Etheridge Plumbing Co.	D	40	2	Qt	92	28	1955	J	D	..	6	18	Casing: 2-in. to 35 ft.; 2-in. screen from 35 to 40 ft. See driller's log.
X-57	Henry Morris	-- Flowers	D	42	2	Qt	...	34	1954	J	D	..	..	...	Casing: 2-in. to 37 ft.; 2-in. screen from 37 to 42 ft.
X-58	R. J. Bush	C. Holland	D	84	2	Tmu	...	40	1953	J	D	..	1	10	
X-59	J. H. Carroll	....	..	100	..	Tmu	...	....	......	Cy	D	..	1	9	
X-60	Powell's Cafe	Etheridge Plumbing Co.	D	170	2	Tmu	162	....	......	Cy	D, P	..	1	15	Casing: 2-in. to 165 ft.; 2-in. screen from 165 to 170 ft. See driller's log.
X-61	....do	....	D	150	2	Tmu	...	100	1945	Cy	N	..	..	...	
X-62	James Hart	C. Holland	D	180	2	Tmu	...	....	......	Cy	D	..	0	12	
X-63	Edward Findley	Windham Pump Co	D	100	2	Tmu	...	70	1955	Cy	D	..	0	15	
X-64	James Hart	C. Holland	D	167	2	Tmu	165	87	1953	Cy	D, S	..	0	11	
X-65	....do	....	..	22.6	1¼	Tmu	164	13.0	8-26-55	P	D	70	0	8	
X-66	Clyde Van Hoosen	C. Holland	..	30.1	1¼	Tcl	174	17.8	8-26-55	P	D	68	..	16	

X-67	do		B	16.3	1¼	Tci	184	6.6	8-10-56	P	D	71	7	16	
X-68	Frank Beasley	C. Holland	D	47	2	Tci	...	30	1953	Cy	D,S	..	2	8	
X-69	Clyde Van Hoosen	do	D	51	4	Tci	206	30	......	Cy	D, P	..	14	20	Casing: 4-in. to 45 ft.; 4-in. screen from 45 to 51 ft.
X-70	do	do	D	51	2	Tci	...	31	1955	Cy	D, P	..	..	...	Casing: 2-in. to 48 ft.; 2-in. screen from 48 to 51 ft.
X-71	Melvin Van Hoosen	do	D	50	2	Tci	...	....	......	Cy	D	..	4	18	
X-72	D. D. Arrington	Etheridge Plumbing Co.	D	47	2	Tci	...	....	......	J	D	..	1	17	
X-73	do	-- Warrick	D	47	2	Tci	...	....	......	Cy	D	..	2	11	
X-74	Nolin's Service Station.	Windham Pump Co	D	155	2	Tmu	108	94	1954	J	D	..	1	21	
X-75	W. C. Bell	C. Holland	D	172	2	Tmu	...	111	2-14-56	C	D	..	14	24	
X-76	B. Roberson and Mary Burkett.	Etheridge Plumbing Co.	D	68	2	Tmu	...	....	......	J	D	..	7	10	
X-77	Early Watkins	Early Watkins	..	25.3	1¼	Qt	...	16.4	2-16-56	P	D	..	11	6	
X-78	Ovis White		..	107	2	Tmu	...	32	12- -55	J	D	..	..	21	
X-79	B. N. White, Jr	C. Holland	J	28	2	Qt	...	20	1951	J	D	..	..	...	
X-80	Velma Rigsby	-- Lambeth	..	25	1¼	Qt	...	....	......	J	D	..	14	10	
X-81	B. N. White	C. Holland	J	30	2	Qt	...	20	1951	Cy	D,S	..	11	10	
X-82	Henry White	Henry White	..	18	1¼	Qt	...	....	......	P	D	..	10	29	
X-83	C. M. Davis	C. M. Davis	D	38	1¼	Qt	...	9.6	2-16-56	..	D,S	..	11	18	
X-84	H. S. Crutchfield	Crutchfield and Gandy	B	63	..	Tmu	...	....	......	J	D,S	..	..	...	
X-85	J. D. Barrow	-- Wafford	J	82	2	Tmu	...	20	1945	..	D,S	67	7	16	
X-86	Robert O. Fore	-- Green	D	55	2	Tmu	...	....	......	J	D	..	..	...	
X-87	C. A. Shefield	C. Holland	D	175	2	Tmu	117	45	12- 1-56	J	D	..	7	17	
X-88	Leemond F. Kelly	do	D	36	2	Tmu	...	26	......	J	D	..	28	5	
X-89	W. F. Killam	do	D	70	2	Tmu	134	60	......	J	D	..	..	...	
X-90	E. L. Johnson	do	D	48	2	Tci	...	36	1955	Cy	D	..	7	10	
X-91	Otto Matheny	Etheridge Plumbing Co.	D	80	2	Tci	...	67	......	J	D,S	..	..	...	
X-92	H. Jerkins	R. Bell	D	140	2	Tci	...	100	......	Cy	D	..	..	...	
X-93	Sue Dyess	C. Holland	D	97	2	Tci	238	83	......	Cy	D	71	7	24	

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
X-94	O. B. and Eunice Bell.	O. B. and Eunice Bell	..	32	3	Tci	...	25	1951	J	D	71	7	18	
X-95	Lige Walker......	Lige Walker.......	Dr	21.1	1¼	Tmu	122	15.7	8- 9-56	P	D	69	145	96	
X-96	T. A. Newton.....	T. A. Newton......	B	...	..	Tmu	...	....	......	P	D	..	7	12	
X-97	W. K. Dean......	C. Holland........	D	153	2	Tmu	117	50	......	J	D	..	..	...	
X-98	S. L. Dean	Patrick Plumbing Co.	D	47	2	Tmu	...	33	......	J	D	..	..	...	
X-99	W. L. Kline......	Gray Artesian Well Co.	D	150	4	Tmu	...	50	......	J	D	..	..	...	
X-100	J. T. Purefoy	E. Kearley	D	260	4	Tmu	125	....	......	..	N	..	..	...	
X-101	....do........	D. C. Green	D	100	2	Tmu	125	....	......	J	D	..	7	48	
X-102	Escambia Ready Mix Concrete Co.	-- Spillers........	D	165	6	Tmu	103	50	......	J	D, Ind	..	11	14	
X-103	L. D. Weaver	....do..........	D	300	4	Tmu	...	....	......	J	Ind	..	..	...	
X-104	Webb Bell	....	..	13.6	1¼	Qt	...	5.1	8- 9-56	P	D	..	..	...	
X-105	Henderson Ready Mix Concrete Co.	C. Holland........	D	14	2	Qal	...	4	......	J	Ind	..	..	...	Reported to have been pumped at rate of 4,000 gallons per day.
*X-106	City of Flomaton...	Spellers Well and Pump Co.	D	143	10	Tmu	73	17	9-10-52	T	P	..	..	...	Casing: 10-in. to 102 ft.; 8-in. screen from 102 to 143 ft. Reported drawdown 15.0 ft. after pumping 760 gpm for 1 hour. See driller's log of test hole drilled to depth of 165 ft.
*X-107	....do........	Gray Artesian Well Co.	D	148	10,8	Tmu	72	....	......	T	P	68	..	...	Casing: 10-in. to 36 ft.; 8-in. from 36 to 118 ft.; 8-in. screen from 118 to 148 ft. See driller's log of test hole drilled to depth of 159 ft. Reportedly pumped at 350 gpm in 1945.
X-108	Harvey J. Odom...	....	D	68.2	2	Tmu	95	8.0	8-10-56	..	D	..	..	...	
X-109	Fanny Mack......	Fanny Mack.......	..	26.0	1¼	Qal	100	18.3	8-10-56	P	D	69	14	23	
X-110	Charles Fore.....	-- Johnson........	..	42	2	Tmu	116	....	......	J	D,S	..	11	8	

X-111	T. H. Pugh		..	18	2	Qt	...	18	......	P	D	..	..	...	
X-112	E. Johnson		J	77	2	Tmu	...	37	1954	Cy	D	67	14	11	
X-113	L. H. Crosby	L. H. Crosby	B	19	1¼	Qt	96	13	1954	P	D	..	..	...	
X-114	L. E. Mitchell	L. E. Mitchell	B	37	2	Qt	...	20	......	P	D	..	..	...	
X-115	S. L. Steely		..	85	2	Tmu	...	....	......	Cy	D,S	..	..	...	
X-116	....do		B	17.0	8	Qt	109	7.2	4-30-56	P	D	65	67	9	
Y- 1	Albert Chancery	Etheridge Plumbing Co.	D	120	2	Tci	278	20	1953	J	D,S	..	11	22	
Y- 2	Roy T. Daw	Rufus Bell	D	55	2	Tci	262	42	1953	J	D	67	7	8	
Y- 3	Marion Daw	....do	D	65	2	Tci	...	....	......	J	D	..	..	...	
Y- 4	Albert Philyaw	L. W. Peebles	D	120	2	Tci	278	104	3- 1-56	J	D	..	..	...	Casing and screen: 2-in. to 120 ft.
Y- 5	O. U. Waring	O. U. Waring	D	121	2	Tci	276	85	1955	Cy	D,S	67	11	6	Casing and screen: 2-in. to 121 ft.
Y- 6	D. C. Troutman	D. C. Troutman	D	65	2	Tci	...	52	1940	Cy	D	..	..	...	Casing: 2-in. to 61 ft.; 2-in. screen from 61 to 65 ft.
Y- 7	W. J. Baker	Etheridge Plumbing Co.	D	70	3	Tci	279	....	......	J	D	68	11	8	Casing and screen: 3-in. to 70 ft.
Y- 8	G. J. Turner	G. J. Turner	B	60.2	9	Tci	280	55.0	5- 1-56	M	D	69	18	12	
Y- 9	D. C. Hall		D	66	2	Tci	...	42	1954	Cy	D	..	..	...	Casing and screen: 2-in. to 66 ft.
Y-10	G. H. Forte	Etheridge Plumbing Co.	D	60	3	Tci	283	28	1947	J	D,S	..	7	...	Casing and screen: 3-in. to 60 ft.
Y-11	Alfred Moye	....do	D	120	2	Tci	273	....	......	Cy	D,S	..	..	...	Casing and screen: 2-in. to 120 ft. See driller's log.
Y-12	Ollie Moye	....do	D	110	2	Tci	265	....	......	Cy	D,S	..	..	...	Casing: 2-in. to 105 ft.; 2-in. screen from 105 to 110 ft.
Y-13	T. A. Daw		D	104	2	Tci	...	69	1920	Cy	D	..	..	...	
Y-14	Albert Philyaw		D	108	2	Tci	...	90	1952	Cy	D,S	..	7	6	Casing and screen: 2-in. to 108 ft.
Y-15	W. A. Moye	Etheridge Plumbing Co.	D	110	2	Tci	271	....	......	Cy	D,S	..	..	...	Casing and screen: 2-in. to 110 ft.
Y-16	G. W. Moye	Rufus Bell	D	86	2	Tmu	...	....	......	Cy	D	..	..	...	
Y-17	W. A. Moye	Etheridge Plumbing Co.	D	96	2	Tmu	...	....	......	Cy	D	..	..	...	Casing and screen: 2-in. to 96 ft.
Y-18	Meddie Moye	Meddie Moye	B	45.0	8	Tmu	...	37.0	4-11-56	M	D	..	..	...	
Y-19	Ellis Moye	C. Holland	J	42	2	Tmu	...	28.2	2- 7-56	J	D,S	..	11	12	
Y-20	C. J. Boutwell		B	31.0	8	Tci	234	26.0	3-20-56	M	D	..	..	...	See driller's log of test hole drilled to depth of 240 ft.

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
Y-21	Mae Flowers	....	..	43	1¼	Tci	...	27	1933	P	D	..	..	...	
Y-22	J. E. Rowell	Rufus Bell	D	65	2	Tci	...	....	......	J	D, S	..	..	...	Casing and screen: 2-in. to 65 ft.
*Y-23	W. R. Farrar	do	D	82	2½	Tci	288	60	1953	J	D, S	..	..	...	Casing: 2½-in. to 72 ft.; 2½-in. screen from 72 to 82 ft. Supplies dairy.
Y-24	J. Z. Miles	do	B	52.7	8	Tci	257	40.1	4-18-56	M	D	..	7	8	
Y-25	W. E. Strickland	Rufus Bell	D	92	2	Tci	289	62	1954	Cy	D, S	70	7	4	Casing and screen: 2-in. to 92 ft. Supplies 90 hogs and 8 cows.
Y-26	M. W. Graham	do	D	96	2	Tci	284	36	1938	J	D	69	7	6	Casing and screen: 2-in. to 96 ft.
Y-27	W. E. Lowrey	....	D	46.5	2	Tci	285	39.4	4-26-56	J	D	..	..	...	
Y-28	G. C. Stallworth	....	..	50	2	Tci	...	33	......	Cy	D	..	..	...	
Y-29	W. M. Adams	Rufus Bell	D	45	2	Tci	...	....	......	Cy	D	..	..	...	Casing and screen: 2-in. to 45 ft.
Y-30	E. L. Mixon	do	D	68	2	Tci	...	38	1-10-56	J	D	..	7	8	Casing and screen: 2-in. to 68 ft.
Y-31	Leon Johnson	Etheridge Plumbing Co.	D	82	2	Tci	283	....	......	J	D	..	..	...	Casing: 2-in. to 77 ft.; 2-in. screen from 77 to 82 ft. See driller's log.
Y-32	Escambia County Board of Education	do	D	...	..	Tci	285	....	......	J	P	..	7	5	
Y-33	R. L. Lowrey	....	B	46.9	8	Tci	...	41.7	4-23-56	J	D	68	11	9	
Y-34	Ina Watson	....	D	27	2	Tci	...	....	......	Cy	D	..	..	...	Casing and screen: 2-in. to 27 ft.
Y-35	Alvin Moye	Rufus Bell	D	60	2	Tci	...	....	......	J	S	..	..	...	Casing and screen: 2-in. to 60 ft.
Y-36	C. B. Long, Sr	C. B. Long, Sr	D	58	2	Tci	...	42	1944	J	D	..	..	...	Casing and screen: 2-in. to 58 ft.
Y-37	A. T. Harrell	Etheridge Plumbing Co.	D	53	2	Tci	...	39	......	J	D	68	..	...	Casing: 2-in. to 49 ft.; 2-in. screen from 49 to 53 ft.
Y-38	Estell Smith	Rufus Bell	D	106	2	Tci	...	90	1952	J	D	..	11	6	Casing and screen: 2-in. to 106 ft.
Y-39	J. H. Findley	do	D	100	2	Tci	...	....	......	Cy	D, S	..	..	...	Casing and screen: 2-in. to 100 ft.

Y-40	Miles Horn	. . . . do	D	55	2	Tci	288	48	1953	Cy	D	. .	. .	. . .	Casing and screen: 2-in. to 55 ft.
Y-41	. . . . do	. . . . do	D	60	2	Tci	. . .	52	1954	J	D,S	. .	14	8	Casing: 2-in. to 55 ft.; 2-in. screen from 55 to 60 ft.
Y-42	. . . . do	Etheridge Plumbing Co.	D	120	3	Tci	288	. . . .	. . . . . .	J	D,S	. .	4	8	Casing: 3-in. to 102 ft.; 3-in. screen from 102 to 120 ft. See driller's log.
Y-43	. . . . do	. . . . do	D	112	4	Tci	289	55	12-21-54	T	D,S	. .	0	8	Casing: 4-in. to 91 ft.; 2-in. screen from 91 to 112 ft. Measured yield 34.0 gpm on 12-21-54.
Y-44	Escambia County Baptist Assoc.	. . . . do	D	. . .	4	Tci	272	. . . .	. . . . . .	J	D	. .	. .	. . .	
Y-45	W. Duke's Estate . .	B. B. Booker.	D	160	2	Tmu	. . .	. . . .	. . . . . .	Cy	D	. .	7	8	
Y-46	A. W. Traweek . . .	A. W. Traweek	D	77	2	Tci	. . .	. . . .	. . . . . .	J	D	. .	11	18	
Y-47	J. W. Childress . . .	E. Chavers	D	16.0	1¼	Tci	284	9.2	8- 8-56	P	D	70	18	36	
Y-48	Alonzo Kendrick . . .	Frank Holland	D	55	2	Tci	. . .	40	. . . . . .	J	D	70	7	17	Casing and screen: 2-in. to 55 ft.
Y-49	L. O. Glass.	Rufus Bell	D	50	2	Tci	. . .	38	1939	J	D	. .	11	11	
Y-50	Miles Horn	. . . . do	D	60	2	Tci	. . .	45	1955	J	D,S	. .	. .	. . .	Supplies 200 head of cattle.
Y-51	. . . . do	. . . . do	D	45	3	Tci	. . .	33	1954	J	S	. .	. .	. . .	Casing: 3-in. to 38 ft.; 3-in. screen from 38 to 45 ft.
Y-52	Austin Z. Savage . .	. . . . do	B	53.7	8	Tci	281	42.0	8- 7-56	J	D	. .	. .	. . .	
Y-53	J. W. Abrams	. . . . do	D	65	3	Tci	. . .	49	1954	J	D, Ind	. .	. .	. . .	Supplies dairy.
Y-54	Atmore Nursery . . .	. . . .	D	150	4	Tci (?)	282	. . . .	1954	T	Ind	. .	7	7	Supplies nursery.
Y-55	C. C. Lee	Rufus Bell	D	70	2	Tci	. . .	50	1946	J	D,S	71	7	10	
Y-56	W. D. Farrar	. . . . do	D	55	2	Tci	. . .	45	1951	J	D,S	. .	11	24	
Y-57	W. H. Fountain . . .	Etheridge Plumbing Co.	D	90	2	Tci	286	49	1954	J	D	. .	. .	. . .	Casing: 2-in. to 85 ft.; 2-in. screen from 85 to 90 ft. See driller's log.
Y-58	J. S. Fountain	J. S. Fountain	B	53.6	8	Tci	. . .	46.5	7-31-56	M	D	. .	. .	. . .	
Y-59	C. E. Hall.	. . . .	D	72	2	Tci	. . .	60	1950	Cy	D	. .	. .	. . .	
Y-60	D. C. Hall.	E. Flowers	D	48	2	Tci	. . .	36	1955	J	D	. .	7	7	Casing and screen: 2-in. to 48 ft.
Y-61	Ida Peavy	. . . .	B	36.9	8	Tci	. . .	30.0	4-24-56	M	D	. .	. .	. . .	
Y-62	J. B. Watson.	. . . .	B	38.1	10	Tci	283	31.0	4-24-56	J	D	. .	. .	. . .	
Y-63	W. T. Rigby	E. Flowers	D	54	2	Tci	. . .	. . . .	1955	J	D	. .	. .	. . .	Casing and screen: 2-in. to 54 ft.
Y-64	C. E. Hall.	. . . . do	J	87	2	Tci	. . .	45	1951	J	D,S	. .	7	7	Casing and screen: 2-in. to 87 ft.
Y-65	Grady Harrelson. . .	. . . . do	D	76	2	Tci	. . .	. . . .	. . . . . .	J	D	. .	. .	. . .	Casing and screen: 2-in. to 76 ft.

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as CaCO$_3$ (ppm)	
Y-66	O. L. Glass	Rufus Bell	D	56	2	Tci	271	45	1955	J	Ind	. .	. .	. . .	Supplies dairy.
Y-67	S. L. Glass	do	D	110	2	Tci	. . .	87	1952	J	D	. .	7	18	
Y-68	H. F. Adkinson	C. Holland	D	75	2	Tci	. . .	65	. . . . . .	J	D	. .	. .	. . .	
Y-69	G. E. Johnson	do	D	70	2	Tci	. . .	50	1954	J	D	. .	7	10	
Y-70	N. R. Nicholas	-- Rowley	D	67	2	Tci	. . .	57	. . . . . .	J	D,S	. .	11	14	
Y-71	Allen Holt	Rufus Bell	D	72	2	Tci	. . .	60	1955	C	D	69	4	18	
Y-72	Fred Killer		B	24.8	8	Tci	. . .	17.4	8-10-56	M	D	. .	. .	. . .	
Y-73	W. W. Johnson	W. W. Johnson	D	120	2	Tci	. . .	100	1954	J	D,S	. .	11	22	
Z- 1	R. M. Helton	R. M. Helton	D	60	2	Tci	. . .	48	. . . . . .	J	D,S	. .	. .	. . .	
Z- 2	X. D. Zeigler	X. D. Zeigler	D	88	2	Tci	. . .	72	1954	Cy	N	. .	. .	. . .	Casing and screen: 2-in. to 88 ft.
Z- 3	do	do	D	197	1¼	Tci	299	11.0	5-15-56	P	S	. .	. .	. . .	
Z- 4	do		D	42	2	Tci	. . .	30	. . . . . .	J	D,S	. .	. .	. . .	Casing and screen: 2-in. to 42 ft.
Z- 5	[illegible] E. Kearley	Rufus Bell	D	40	2	Tci	. . .	. . . .	. . . . . .	J	D,S	. .	. .	. . .	
Z- 6	R. L. Goldsmith	Etheridge Plumbing Co.	D	98	2	Tci	285	. . . .	. . . . . .	J	D,S	70	4	7	Casing: 2-in. to 93 ft.; 2-in. screen from 93 to 98 ft. See driller's log.
Z- 7	A. T. Pouncey	do	D	92	2	Tci	298	70	1952	Cy	D	. .	14	8	Casing and screen: 2-in. to 92 ft.
Z- 8	David Brazzell	Dan Dailey	D	40	1¼	Tci	. . .	33	. . . . . .	P	D	65	0	7	
Z- 9	do	do	D	56	2	Tci	. . .	46	1953	Cy	D,S	. .	0	5	
Z-10	Grady Brazzell	do	D	97	2	Tci	. . .	. . . .	. . . . . .	Cy	D,S	69	. .	8	
Z-11	E. N. Robinson	E. N. Robinson	D	68	2	Tci	. . .	58	1945	Cy	D,S	. .	. .	. . .	
Z-12	J. R. Criswell	Etheridge Plumbing Co.	D	70	2	Tci	292	. . . .	. . . . . .	J	D	. .	11	25	Casing: 2-in. to 65 ft.; 2-in. screen from 65 to 70 ft. See driller's log.
Z-13	Ross Jackson		. .	37	1¼	Tci	. . .	27	1938	P	D	70	11	6	Casing and screen: 2-in. to 37 ft.

Z-14	J. L. Merriweather	....	D	65	2	Tci	...	53	......	J	D,S	..	.	...	Casing and screen: 2-in. to 65 ft.
Z-15	H. S. Drew	Rufus Bell	D	36	2	Tci	...	16	1956	J	D	70	7	9	Casing and screen: 2-in. to 36 ft.
Z-16	C. L. Davison	Etheridge Plumbing Co.	D	61	2	Tci	299	32	1957	J	D,S	..	..	...	Casing: 2-in. to 56 ft.; 2-in. screen from 56 to 61 ft. Reported to be pumped at 6.0 gpm. See driller's log.
Z-17	J. R. Roberts	....	D	45	2	Tci	...	29	......	J	D	..	..	...	
Z-18	L. B. Lassiter	Rufus Bell	D	53	2	Tci	...	33	1952	J	D,S	70	11	10	
Z-19	B. E. Vickrey	W. D. Bell	B	41.1	8	Tci	293	31.9	6- 1-56	M	D,S	..	..	...	
Z-20	A. C. Murph	Etheridge Plumbing Co.	D	120	2	Tci	299	....	......	J	D,S	..	11	13	Casing: 2-in. to 106 ft.; 2-in. slotted pipe from 106 to 120 ft. See driller's log.
Z-21	T. E. Steadham	B. B. Booker	D	50	2	Tci	...	32	1948	J	D,S	68	6	27	Casing: 2-in. to 45 ft.; 2-in. screen from 45 to 50 ft. Deepened from 30 to 50 ft.
Z-22	Charles Henderson	Dan Dailey	D	33	1¼	Tci	...	27	......	P	D	..	..	...	
Z-23	Virginia Dickerson	.....do	D	35	1¼	Tci	...	27	1951	P	D	68	0	6	Casing: 1¼-in. to 32 ft.; 1¼-in. screen from 32 to 35 ft.
Z-24	Evans McMillan	.....do	D	40	1¼	Tci	...	34	1941	P	D,S	66	0	8	
Z-25	Andrew Leslie	.....do	D	45	..	Tci	...	....	......	Cy	D	..	0	7	
Z-26	J. B. Bullard	Jeff Hall	D	40	1¼	Tci	...	....	......	P	D	..	..	...	Casing and screen: 1¼-in. to 40 ft.
Z-27	Ellis Etheridge	Dan Dailey	D	45	1¼	Tci	...	35	......	P	D	69	7	5	Casing and screen: 1¼-in. to 45 ft.
Z-28	William Cheesboro	....	B	43.3	8	Tci	...	37.2	......	M	D	..	..	...	
Z-29	J. N. Helton	J. N. Helton	D	44	2	Tci	297	33	......	J	D,S	..	4	5	Casing: 2-in. to 41 ft.; 2-in. screen from 41 to 44 ft.
Z-30	E. D. Fore	D. C. Troutman	D	50	2	Tci	...	40	......	J	D,S	..	..	...	
Z-31	W. T. Findley	....	D	50	2	Tci	...	38	1954	Cy	D,S	..	..	...	Casing and screen: 2-in. to 50 ft.
Z-32	E. D. Fore	....	D	19.2	1¼	Tci	...	14.1	5- 4-56	P	D	..	..	...	
Z-33	A. P. Helton	....	D	54	2	Tci	...	40	......	J	D,S	..	..	...	
Z-34	E. D. Fore	Rufus Bell	D	40	2	Tci	...	28	1944	J	D	..	7	8	Casing and screen: 2-in. to 40 ft.
Z-35	Escambia County Board of Education	.....do	D	40	2	Tci	...	28	......	J	P	..	11	16	Supplies school.
Z-36	J. R. Roberts	....	D	45	2	Tci	...	31	1944	Cy	D	..	..	...	Casing and screen: 2-in. to 45 ft.
Z-37	H. C. Kearley	Etheridge Plumbing Co.	D	110	2	Tci	295	45	1955	J	D,S	..	..	...	Casing and screen: 2-in. to 110 ft.
Z-38	F. M. Helton	F. M. Helton	D	45	2	Tci	...	33	......	Cy	D,S	..	..	...	
Z-39	S. B. Troutman	D. Troutman	D	52	3	Tci	...	38	1949	J	D,S	..	..	...	

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
Z-40	L. N. Findley	L. N. Findley	D	40	2	Tci	. . .	31	. . . . . .	Cy	D	. .	. .	. . .	
Z-41	J. L. Miller	J. L. Miller	B	42.1	8	Tci	285	23.1	5-16-57	J	D,S	. .	. .	. . .	Observation well.
Z-42	M. O. Turner	. . . .	D	115	2	Tci	285	75	1953	J	D	. .	. .	. . .	Casing and screen: 2-in. to 115 ft.
Z-43	C. Moulton	. . . .	D	60	2	Tci	. . .	40	. . . . . .	Cy	D	. .	. .	. . .	
Z-44	Herman Wesley . . .	Rufus Bell	J	59	2	Tci	. . .	44	1949	J	D,S	69	11	7	Casing and screen: 2-in. to 59 ft.
Z-45	W. H. Lee.	W. H. Lee.	D	40	2	Tci	. . .	32	. . . . . .	P	D	. .	. .	. . .	
Z-46	J. P. Stanton	Rufus Bell	D	55	2	Tci	. . .	45	. . . . . .	J	D,S	69	. .	. . .	Casing and screen: 2-in. to 55 ft.
Z-47	W. H. Stanton	W. H. Stanton	D	50	2	Tci	. . .	32	. . . . . .	J	D,S	69	7	6	
Z-48	J. C. Rushing	Rufus Bell	J	60	2	Tci	. . .	. . . .	. . . . . .	J	D	. .	. .	. . .	Casing and screen: 2-in. to 60 ft.
Z-49	Charles Stephens . .	Jim Stephens	D	32.5	1¼	Tci	290	23.6	. . . . . .	P	D	68	7	9	
Z-50	Escambia County Board of Education .	. . . .	J	35	2½	Tci	291	20	. . . . . .	P	P	69	7	13	Casing and screen: 2½-in. to 35 ft.
Z-51	J. D. Lee	D. C. Troutman	D	45	2	Tci	. . .	35	. . . . . .	J	D,S	69	7	11	Casing and screen: 2-in. to 45 ft.
Z-52	J. T. Kearley	Rufus Bell	D	45	2	Tci	. . .	25	1955	J	D,S	. .	. .	. . .	Casing: 2-in. to 42 ft.; 2-in. screen from 42 to 45 ft.
Z-53	R. B. Peacock	D. C. Troutman	D	60	3	Tci	. . .	50	. . . . . .	J	D,S	. .	7	11	Casing and screen: 3-in. to 60 ft.
Z-54	J. W. Helton	Rufus Bell	D	47	3	Tci	. . .	. . . .	. . . . . .	J	D,S	68	11	16	Casing and screen: 3-in. to 47 ft.
Z-55	Ransom Lambert . .	Ransom Lambert . . .	D	48	1¼	Tci	. . .	40	1956	P	D	. .	. .	. . .	Casing: 1¼-in. to 43 ft.; 1¼-in. screen from 43 to 48 ft.
Z-56	Dan Dailey.	Dan Dailey.	D	25.4	1¼	Tci	. . .	21.9	5- 8-56	P	D	. .	. .	. . .	
Z-57	Rachel Westbrook . .	. . . . . do	D	29.9	1¼	Tci	294	22.4	5- 8-56	P	D	67	7	5	
Z-58	R. E. Wiggin	R. E. Wiggin	D	38	1¼	Tci	. . .	31	1- 5-56	P	D	68	7	4	
Z-59	Charles Jackson . . .	. . . .	D	60	2	Tci	. . .	40	. . . . . .	J	D	. .	11	6	Casing and screen: 2-in. to 60 ft.

Z-60	P. J. Singleton. . . .	Dan Dailey.	D	40	1¼	Tci	. . .	32	1944	P	D	. .	. .	. . .	Casing and screen: 1¼-in. to 40 ft.
Z-61	H. S. Scott	H. S. Scott	D	25.4	1¼	Tci	. . .	21.9	5- 8-56	P	D	67	11	7	
Z-62	John Parker.	W. Pipkins	D	22.9	1¼	Tci	295	16.1	5- 9-56	P	D	68	43	20	
Z-63	Robert Golden	Robert Golden	D	20.2	1¼	Tci	285	21.3	6- 1-56	P	D,S	72	. .	. . .	
Z-64	C. L. Pierce.	C. L. Pierce.	D	29	1¼	Tci	. . .	25	1951	J	D,S	72	67	19	Casing: 1¼-in. to 26 ft.; 1¼-in. screen from 26 to 29 ft.
Z-65	Henry McCant	Henry McCant	D	35	2	Tci	. . .	23	1941	P	D	. .	. .	. . .	Casing: 2-in. to 32 ft.; 2-in. screen from 32 to 35 ft.
Z-66	Mike Simpson.	Mike Simpson, Jr . . .	. .	46	6	Tci	. . .	. . . .	. . . . . .	J	D	. .	. .	. . .	
Z-67	Marie Bayne	Dan Dailey.	D	30.6	1¼	Tci	. . .	20.4	6- 7-56	P	D	68	14	17	
Z-68	A. A. Vickery	Rufus Bell	D	55	2	Tci	. . .	43	1951	J	D,S	69	7	5	Casing: 2-in. to 52 ft.; 2-in. screen from 52 to 55 ft.
Z-69	Henry McCant	Etheridge Plumbing Co.	D	60	2	Tci	. . .	45	1950	J	D,S	. .	. .	. . .	Casing and screen: 2-in. to 60 ft.
Z-70	W. M. Carney Mill Co.	Gray Artesian Well Co.	D	153	8	Tci (?)	290	30	9-25-45	T	Ind	. .	. .	. . .	Casing: 8-in. to 60 ft.; none below. Reported to be pumped at 200 gpm. See driller's log.
*Z-71	City of Atmore	. . . . do	D	130	8	Tci	290	47.8	4-24-57	T	P	69	. .	. . .	Casing: 8-in. to 92 ft.; none below.
*Z-72	. . . . do	Layne-Central Co. . .	D	129	18, 8	Tci	285	18	8-21-45	T	P	69	. .	. . .	Casing: 18-in. to 21 ft.; 8-in. from surface to 100 ft.; 8-in. screen from 100 to 129 ft. Measured yield 333 gpm on 4-24-57. See driller's log.
*Z-73	. . . . do	Gray Artesian Well Co.	D	261	12	Tmu	287	22	7- 1-48	T	P	. .	. .	. . .	Casing: 12-in. to 208 ft.; 8-in. screen from 208 to 261 ft. Measured yield 463 gpm on 4-24-57. See driller's log of test hole drilled to depth of 403 ft.
Z-74	D. C. Troutman. . .	. . . .	D	29.8	1¼	Tci	291	22.4	5- 4-56	P	D	67	11	6	
Z-75	R. L. Goldsmith. . .	Etheridge Plumbing Co.	D	45	2	Tci	289	20	. . . . . .	J	S	. .	7	6	Casing: 2-in. to 42 ft.; 2-in. screen from 42 to 45 ft.
Z-76	. . . . do	. . . . do	D	82	4	Tci	289	50	9- 3-53	T	D	. .	7	11	Casing: 4-in. to 62 ft.; 4-in. screen from 62 to 82 ft. See driller's log.
Z-77	R. C. Chapman . . .	. . . . do	D	50	2	Tci	. . .	45	1953	J	D	. .	. .	. . .	
Z-78	. . . . do	Elmer Ridgeway. . . .	D	32.5	1¼	Tci	297	24.5	5- 9-56	P	D	. .	. .	. . .	
Z-79	F. M. Helton.	. . . .	D	60	3	Tci	294	40	. . . . . .	J	D,S	. .	. .	. . .	Casing: 3-in. to 50 ft.; 3-in. screen from 50 to 60 ft.
Z-80	David Powers.	. . . .	J	35	2	Tci	. . .	30	1954	J	D	. .	. .	. . .	Casing and screen: 2-in. to 35 ft.
Z-81	W. T. Black	. . . .	J	45	2	Tci	. . .	30	1954	J	D	69	. .	. . .	
Z-82	H. C. Black	-- Flowers	D	60	2	Tci	. . .	30	. . . . . .	J	D,S	. .	11	4	Casing and screen: 2-in. to 60 ft.
Z-83	Jessie Sanders. . . .	. . . .	J	49	1½	Tci	. . .	35	1954	P	D	. .	. .	. . .	Casing and screen: 1½-in. to 49 ft.

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
Z-84	B. F. Myrick	Rufus Bell	D	50	2	Tci	...	....	......	J	D	..	..	...	Casing and screen: 2-in. to 50 ft.
Z-85	R. C. Lowrey	Etheridge Plumbing Co.	D	61	2	Tci	281	37	1955	J	D	69	7	9	Casing: 2-in. to 56 ft.; 2-in. screen from 56 to 61 ft. See driller's log.
Z-86	C. E. Batchelor	Rufus Bell	D	65	2	Tci	...	....	......	J	D	..	..	...	
Z-87	....do	....do	D	60	3	Tci	...	....	......	J	D	..	..	...	
Z-88	John F. Vickrey	Patrick Plumbing Co.	D	35	2	Tci	...	28	......	J	D,S	..	..	...	
Z-89	J. L. Jones	J. L. Jones	D	40	2	Tci	...	20	......	J	D	..	..	...	Casing and screen: 2-in. to 40 ft.
Z-90	J. T. Hobbs	Etheridge Plumbing Co.	D	50	2	Tci	288	....	......	J	D	..	..	...	Casing: 2-in. to 45 ft.; 2-in. screen from 45 to 50 ft. See driller's log.
Z-91	H. B. Moreing	E. Kearley	D	40	2	Tci	...	30	......	J	D	..	..	...	
Z-92	S. J. Peacock	Etheridge Plumbing Co.	D	55	2	Tci	291	43	......	Cy	D	..	..	...	Casing and screen: 2-in. to 55 ft.
Z-93	J. T. Moye	....do	D	50	2	Tci	289	....	......	J	D	..	7	6	Casing: 2-in. to 46 ft.; 2-in. screen from 46 to 50 ft. See driller's log.
Z-94	F. F. Amos	....	B	43.5	8	Tci	285	33.7	8- 1-56	M	N	..	..	...	
Z-95	Eddie Johnson	Eddie Johnson	D	30	1¼	Tci	...	22	......	P	D	..	14	15	
Z-96	Alton Tennant	....	D	43	2	Tci	...	35	......	J	D,S	..	11	12	Casing and screen: 2-in. to 43 ft. Supplies about 100 cattle.
Z-97	A. L. Cooper	Jasper Byrd	D	45	2	Tci	...	35	1955	J	D	70	14	13	Casing and screen: 2-in. to 45 ft.
Z-98	Clark Davison	Rufus Bell	D	28	1¼	Tci	...	18	......	P	D	..	14	8	Casing and screen: 1¼-in. to 28 ft.
Z-99	B. W. Purvis	B. W. Purvis	D	38	2	Tci	...	30	1950	J	D	..	..	...	
Z-100	W. E. Coker	Rufus Bell	D	38	2	Tci	...	30	1951	J	D,S	..	..	...	
Z-101	J. L. Gibbs	....do	D	42	2	Tci	...	24	1950	J	D,S	..	..	...	
Z-102	J. M. Black	T. Byrd	D	47	2	Tci	282	30	1950	J	D,S	70	7	14	Supplies 100 hogs and 50 cows.
Z-103	H. Gates	Rufus Bell	D	49	2	Tci	...	35	......	J	D	..	..	...	

Z-104	N. A. Hale	....	D	45	2	Tci	...	30	......	Cy	D	..	..	...	Casing and screen: 2-in. to 45 ft.
Z-105	C. F. Long	Rufus Bell	D	65	3	Tci	276	40	1952	J	D,S	..	7	8	Casing and screen: 3-in. to 65 ft. Supplies 100 cows.
AA- 1	Charles Quarker...	....	B	37	2	Tci	...	27	1956	J	D	70	7	12	
AA- 2	Tizanna Thames...	Gene Robinson	B	24	1½	Tci	...	13	1952	J	D,S	..	..	...	
AA- 3	L. B. Earle......	Rufus Bell	B	58	2	Tci	295	38	1954	J	D	..	..	...	
AA- 4	B. W. Carter.....	Etheridge Plumbing Co.	D	50	2	Tci	290	....	1954	J	D	..	11	...	Casing: 2-in. to 45 ft.; 2-in. screen from 45 to 50 ft. See driller's log.
AA- 5	Elsie Stallworth ...	Elsie Stallworth	B	26.6	1½	Tci	293	16.5	7- 2-56	P	D	..	7	10	
AA- 6	J. M. Barrington ..	Rufus Bell	..	40	2	Tci	294	30	......	J	D,S	..	7	8	
AA- 7	Joseph Thames....	Joseph Thames.....	B	30.8	1½	Tci	294	24.2	7-22-56	P	D	68	7	5	
AA- 8	S. L. Quarker	S. L. Quarker	B	34	2	Tci	295	28	1956	J	D,S	..	11	38	
AA- 9	Arline Rolin......	Arline Rolin.......	B	27.6	1½	Tci	283	19.6	7-19-56	P	D	69	11	6	
AA-10	Ewing Estate	June Kyser	D	79	2	Tci	306	60	1947	Cy	N	..	..	...	
AA-11	....do........	....do.........	D	79	2	Tci	305	60	1948	Cy	D	..	..	...	
AA-12	....do........	....do.........	D	79	2	Tci	300	60	1950	Cy	N	..	..	...	
AA-13	....do........	....do.........	B	42	1½	Tci	258	30	1946	P	D	..	..	...	
AA-14	....do........	....do.........	B	55	2	Tci	...	40	1930	C	D,S	..	..	...	
AA-15	....do........	W. Tyree	B	79	2	Tci	290	59	1955	C	D,S	..	..	...	
AA-16	....do........	June Kyser	B	79	2	Tci	290	59	1936	C	D,S	72	11	4	
AA-17	D. C. Lambert....	Etheridge Plumbing Co.	D	57	2	Tci	293	38	......	J	D,S	..	..	...	
AA-18	P. J. Holsenback ..	-- Wooten	B	45	2	Tci	...	35	1945	J	D	..	..	...	
AA-19	Joe B. Hardy.....	Joe B. Hardy......	B	47	2	Tci	283	40	1945	J	D,S	70	14	11	
AA-20	June Kyser	June Kyser	B	52	2	Tci	290	40	1948	J	D	71	39	46	
AA-21	C. K. Carter.....	Jim White	B	46.0	8	Tci	290	36.6	7-23-56	M	D	..	..	...	
AA-22	J. T. Cayne......	Rufus Bell	B	56	2	Tci	...	36	1954	J	D	..	..	...	
AA-23	Houston Sanspree ..	....do.........	B	82	2	Tci	...	50	1954	J	D	70	7	22	
AA-24	Atmore Country Club.	....	..	28	1½	Tci	...	20	......	J	D	..	..	...	
AA-25	Carl Jones.......	B. B. Booker......	D	60	2	Tci	...	40	1954	J	D	70	5	14	
AA-26	L. L. Donald.....	L. L. Donald......	B	85	2	Tci	285	60	1950	J	D	..	..	...	

Table 4.—*Records of wells in Escambia County, Ala.*—Continued

Well	Owner	Driller	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Field determinations			Remarks
								Above (+) or below land surface (feet)	Date of measurement			Temperature (° F)	Chloride (Cl) (ppm)	Hardness as $CaCO_3$ (ppm)	
AA-27	H. M. Cry	Atlas Drilling Co	D	232	10	Tmu	290	52	3-11-53	T	Irr	69	7	6	See driller's log.
AA-28	S. A. Carnley	S. A. Carnley	B	70	2	Tci	252	55	1939	J	D	..	..	...	
AA-29	Comer Curry	Etheridge Plumbing Co.	D	110	2	Tci	262	90	1954	Cy	D	..	..	...	Casing: 2-in. to 100 ft.; 2-in. screen from 100 to 110 ft. See driller's log.
AA-30	J. C. Adams	....	B	41.4	10	Tci	234	37.3	7-27-56	M	D	..	..	...	
AA-31	L. C. James	Etheridge Plumbing Co.	B	45	2	Tci	220	35	......	J	D,S	..	..	...	
AA-32	Dennis James	....	B	40.1	8	Tci	212	25.3	7-27-56	M	D	..	..	...	
AA-33	Royal Johnson	Rufus Bell	B	80	2	Tci	...	65	1954	Cy	D	..	..	...	
AA-34	C. C. Long	C. C. Long	B	20	1¼	Tci	...	14	1942	P	D,S	..	..	...	
AA-35	M. L. Milstead	Etheridge Plumbing Co.	D	100.0	2	Tci	289	73.6	7-26-56	Cy	D	..	..	...	
AA-36	I. J. Cochran	do	D	100	2	Tci	252	80	1954	Cy	D,S	..	..	...	
AA-37	J. W. Stamps	....	B	32	2	Tci	...	7.5	7-24-56	J	D	..	11	15	
AA-38	E. A. Byars	Sid Carnley	D	90	2	Tci	...	90	1944	Cy	D	..	7	11	
AA-39	Dan Boatwright	Rufus Bell	D	82	2	Tci	...	52	1953	Cy	D	..	..	...	
AA-40	P. E. Daniels	P. E. Daniels	D	91	2	Tci	...	70	1941	J	D,S	..	..	...	
AA-41	J. W. Hall	Rufus Bell	D	105	2	Tci	...	74	1954	Cy	D	..	..	...	
AA-42	H. D. Huckabee	Etheridge Plumbing Co.	D	100	2	Tci	285	66	1954	J	D,S	70	7	11	Casing: 2-in. to 90 ft.; 2-in. screen from 90 to 100 ft. See driller's log.
AA-43	Gay Flowers	Gay Flowers	D	86	2	Tci	290	65	......	J	D	71	11	10	
AA-44	N. Nall	N. Nall	D	97	2	Tci	...	72	1956	J	D	..	..	...	
AA-45	N. L. McGhee	-- White	B	38.0	8	Tci	241	25.1	7-30-56	M	D	..	..	...	
AA-46	G. T. Turner	do	B	67.9	8	Tci	268	56.1	7-30-56	M	D	..	..	...	

Table 5.—*Chemical analyses of water from selected wells in Escambia County, Ala.*

Well: Numbers correspond to those in plate 1 and tables 2, 4, 6, and 7.

Water-bearing unit: Tl, Lisbon Formation; Tgo, Gosport Sand; Tmb, Moodys Branch Formation; Ty, Yazoo Clay; To, Ocala Limestone; Tm, Marianna Limestone; Tg, Glendon Limestone Member of Byram Formation; Tb, Bucatunna Clay Member of Byram Formation; Tc, Chickasawhay Limestone; Tmu, Miocene Series undifferentiated; Tci, Citronelle Formation; Qt, Terrace deposits; Qal, Alluvium.

Well	Date of collection	Water-bearing unit	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na) and Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25° C)	pH
			Parts per million															
A- 2	4-11-55	Ty	...	...	0.00	49	5.3	6.5	172	5.5	7.5	0.2	0.2	...	144	3	305	7.8
B-21	6-22-56	Tmu	...	...	.00	8.8	.7	2.8	32	1.2	2.5	.1	.1	...	25	0	55	6.8
D- 4	6-13-55	Tg Tm To	...	...	.02	35	13	14	180	18	2.5	.1	.2	...	141	0	322	7.8
D-45	6-25-56	Tmu	...	...	.02	7.6	2.7	4.4	32	9.5	2.0	.1	.0	...	30	4	73	7.1
E-31	6-25-56	Tmu	...	...	.00	9.0	4.5	3.7	54	1.2	2.2	.1	.0	...	41	0	88	7.0
E-45	6-22-56	Tg Tm To	...	...	.00	26	14	14	171	8.5	3.0	.4	.1	...	122	0	271	7.9
F- 3	6-23-56	Tmu	...	...	.00	6.0	1.2	5.8	34	1.0	2.2	.1	.0	...	20	0	54	6.7
F-13	4-14-55	Tg Tm To	...	...	.03	29	9.6	18	166	10	2.5	.2	.3	...	112	0	283	7.8
H-51	6-22-56	Tci	...	...	.00	3.6	.7	2.5	16	.0	2.5	.2	.7	...	12	0	29	6.6
H-68	6-22-56	Tmu	...	...	.00	1.6	.1	3.0	9	.0	2.5	.0	.1	...	4	0	17	6.6
J-27	6-22-56	Tci	...	...	.00	1.8	.2	3.7	4	.0	4.2	.1	4.2	...	6	2	26	5.7
K-18	6-25-56	Tci	...	...	.00	.6	.5	3.4	6	1.0	2.8	.1	.4	...	4	0	14	6.2
L- 1	6-25-56	Tmu	...	...	.00	2.0	.2	2.8	9	.8	2.0	.1	.3	...	6	0	18	6.5
M-41	6-22-56	Tci Tmu	...	...	.00	.8	.1	2.1	4	.0	2.2	.0	.5	...	2	0	10	6.0
O-17	6-25-56	Tc	...	...	.06	26	12	5.3	136	10	2.5	.2	.0	...	114	3	222	7.9
O-21	3- 3-55	Tmu	...	...	.02	21	8.9	4.1	93	13	5.0	.4	.1	...	89	13	180	7.4

Table 5.—*Chemical analyses of water from selected wells in Escambia County, Ala.*—Continued

Well	Date of collection	Water-bearing unit	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na) and Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$		Specific conductance (micromhos at 25° C)	pH
															Calcium, magnesium	Noncarbonate		
			Parts per million															
O-85	4-11-55	Tg Tm To Ty Tmb Tgo Tl	...	...	0.09	31	6.7	27	177	10	6.0	0.3	0.0	...	105	0	307	7.9
O-110	6-23-56	Tmu	...	...	.00	11	1.3	4.6	38	7.0	2.8	.1	.1	...	33	2	81	6.9
O-129	5-25-55	Tc Tb	...	...	.01	28	13	7.7	155	9.0	2.0	.3	.1	...	123	0	263	7.8
O-141	5-25-55	Tl	...	...	.02	27	7.0	28	174	10	3.0	.1	.5	...	96	0	297	8.0
O-146	3-29-55	Tl (?)	...	...	.09	25	12	16	159	10	4.5	.3	.3	...	112	0	283	7.9
1/ O-150	1-31-57	Tl	39	0.0	.15	28	5.6	...	165	2.3	2.9	.3	.3	192	93	0	292	8.1
O-162	4-12-55	Tmu	...	...	.05	28	11	9.0	148	7.0	4.0	.1	.1	...	115	0	250	7.7
O-174	5-25-55	Tl	...	...	.03	37	6.7	22	176	9.0	9.0	.1	.3	...	120	0	318	7.6
P-18	6-25-56	Tmu	...	...	.00	5.4	1.5	3.9	24	1.0	3.2	.1	3.1	...	20	0	52	6.7
P-30	6-25-56	Tg Tm To	...	...	.00	26	13	18	171	12	3.0	.5	.0	...	118	0	280	7.8
Q- 2	3-25-55	Tg Tm To	...	...	.30	32	11	6.5	150	7.0	4.5	.5	.2	...	124	1	280	8.0
2/ Q-42	5-17-56	Tg Tm To Ty Tmb Tgo(?)	...	...	.00	49	12	...	200	5.0	3.5	.1	.2	...	172	8	316	7.8
Q-64	6-22-56	Tmu	...	...	.00	1.0	.1	3.7	6	.8	3.0	.0	1.0	...	3	0	17	6.2
R-29	4- 5-55	Tc Tg Tm To	...	...	.22	33	5.3	6.8	122	12	4.0	.2	.1	...	104	4	222	7.9

S-18	6- 2-55	Tmu	...	...	.15	2.6	2.3	3.2	4	12	5.0	.0	.0	...	16	13	94	5.3
S-38	6-26-56	Tmu	...	...	.00	7.2	1.6	4.1	33	1.5	2.0	.1	1.7	...	24	0	57	6.7
T-13	6- 2-55	Tg Tm To Ty Tmb Tgo(?)	...	...	.20	17	5.3	45	171	4.0	12	.3	.5	...	64	0	311	8.0
U- 3	6-23-56	Tmu (?) Tc	...	...	.00	25	9.1	5.1	121	8.0	2.2	.2	.0	...	100	1	200	7.7
U-17	6-25-56	Tci	...	...	.00	1.6	1.1	3.7	8	1.0	3.2	.1	5.1	...	8	2	34	6.5
V- 2	6-22-56	Qt	...	...	.00	1.6	.1	5.5	8	4.0	3.8	.1	.0	...	4	0	29	6.6
V-22	2-18-55	Tg Tm To Ty Tmb Tgo Tl	...	...	.07	21	7.0	34	175	1.5	7.0	.2	.1	...	81	0	305	8.0
V-27	6- 2-55	Tg Tm To	...	...	.04	19	11	36	182	12	5.5	.4	.7	...	93	0	315	8.1
V-42	6- 1-55	Tg Tm To	...	...	.10	19	7.4	27	146	12	3.0	.2	.5	...	78	0	255	8.2
V-69	6-23-56	Tci	...	...	.01	1.4	.4	3.9	10	.0	3.2	.1	.5	...	5	0	24	6.5
3/ W- 4	4-23-56	Tmu Tg Tm To	13	...	1.7	15	18	...	215	8	25	...	.2	319	112	0	...	7.9
W-21	6-25-56	Tmu	...	...	.00	7.0	1.6	2.8	32	.0	2.5	.1	.0	...	24	0	55	6.8
W-51	3-30-55	Tg Tm To	...	...	.06	20	10	50	217	10	7.0	.7	1.0	...	93	0	370	8.0
W-98	2- 7-55	Tmu	...	...	.07	16	8.8	40	168	12	8.5	.3	.0	...	76	0	307	8.0
W-110	4-12-55	Tmu	...	...	.04	22	7.6	9.2	115	9.0	1.5	.1	.1	...	86	0	204	7.3
W-119	4-12-55	Tmu	...	...	.00	20	12	25	160	12	6.0	.2	.6	...	99	0	290	7.6
W-128	4-12-55	Tg Tm To Ty Tmb Tgo Tl(?)	...	...	.01	10	9.0	89	270	14	12	.8	1.4	...	62	0	472	7.9

Table 5.—*Chemical analyses of water from selected wells in Escambia County, Ala.*—Continued

Well	Date of collection	Water-bearing unit	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na) and Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$		Specific conductance (micromhos at 25° C)	pH
															Calcium, magnesium	Noncarbonate		
			Parts per million															
X-37	6-26-56	Tci	...	...	0.00	2.4	2.2	4.6	10	1.0	4.5	0.1	11	...	15	7	53	6.5
X-106	4- 1-55	Tmu	...	...	.01	1.7	1.2	3.4	7	2.0	5.5	.3	.1	...	9	3	32	5.9
X-107	8-21-45	Tmu	...	...	...	...	...	...	5	2	4	.0	.0	...	8	4	...	...
Y-23	6-22-56	Tci	...	...	.00	1.2	.2	...	7	.0	2.5	.0	.0	...	4	0	16	6.4
4/ Z-71	7- 3-46	Tci	8.4	0.3	.3	.9	.3	...	2.5	6.5	3.5	...	...	...	31	1	...	...
Z-72	8-21-45	Tci	...	...	...	...	...	...	5	1	5	.0	.0	...	12	8	...	...
4/ Z-72	7- 3-46	Tci	8.0	.6	.3	.9	.3	...	2.5	6.5	3.5	...	...	...	31.0	1	...	...
Z-73	4- 1-55	Tmu	...	...	.00	2.2	1.1	3.0	9	1.5	5.0	.2	.1	...	10	3	30	5.9

1/ Sodium 19, potassium 5.4, color 9.
2/ Sodium 12, potassium 2.7.
3/ Sodium 45; analysis by A. W. Williams Inspection Co.
4/ Analysis by Pittsburg Testing Laboratories.

Table 6.—*Depth of geologic units based on electric logs of water and oil test wells, Escambia County*

(All depths given in feet below land surface. Well numbers, where given, correspond with those in plate 1 and tables 2, 4, 5, and 7.)

Well	Location	Altitude of land surface (feet)	Depths penetrated					
			Citronelle Formation and Miocene Series	Chickasawhay Limestone and Bucatunna Clay Member of Byram Formation	Glendon Limestone Member of Byram Formation, Marianna Limestone, Red Bluff Clay, and Ocala Limestone	Yazoo Clay, Moodys Branch Formation	Gosport Sand	Lisbon Formation
Oil test	SE¼NW¼ sec. 10, T. 3 N., R. 10 E.	251	0-100	100-200	200-290	290-400	400-415	415-560
Do.	NE¼SW¼ sec. 21, T. 3 N., R. 10 E.	200	....	.....	240-315	315-415	415-425	425-600
Do.	SW¼NW¼ sec. 8, T. 3 N., R. 9 E.	319	....	.....	395-480	480-570	570-590	590-695
Do.	SE¼NE¼ sec. 16, T. 3 N., R. 6 E.	225	....	.....	.....	*514-555	555-570	570-725
Do.	NE¼SW¼ sec. 16, T. 3 N., R. 6 E.	338	0-400	400-520	520-635	635-750	750-760	760-900
Do.	NE¼NE¼ sec. 10, T. 2 N., R. 5 E.	285	0-595	595-730	730-840	840-915	915-940	940-1,040
Do.	SE¼NE¼ sec. 18, T. 2 N., R. 5 E.	313	....	*750-800	800-900	900-980	980-995	995-1,110
Do.	SW¼NE¼ sec. 21, T. 2 N., R. 6 E.	192	....	*566-625	625-725	725-800	800-830	830-970
Do.	NE¼NE¼ sec. 29, T. 2 N., R. 6 E.	291	0-650	650-785	785-885	885-970	970-990	990-1,120
Do.	SW¼SE¼ sec. 32, T. 2 N., R. 6 E.	262	....	.....	.....	.....	1,005-1,020	1,020-1,180
Do.	SW¼SE¼ sec. 34, T. 2 N., R. 6 E.	251	0-660	660-820	820-895	895-965	965-985	985-1,155
Do.	NW¼SW¼ sec. 35, T. 2 N., R. 6 E.	261	0-670	670-820	820-905	905-975	975-995	995-1,160
Do.	SW¼SE¼ sec. 4, T. 2 N., R. 8 E.	165	....	.....	.....	*525-590	590-610	610-745
Do.	SE¼SW¼ sec. 9, T. 2 N., R. 8 E.	254	....	*429-515	515-610	610-710	710-720	720-870

Table 6.—*Depth of geologic units based on electric logs of water and oil test wells, Escambia County*—Continued

Well	Location	Altitude of land surface (feet)	Depths penetrated					
			Citronelle Formation and Miocene Series	Chickasawhay Limestone and Bucatunna Clay Member of Byram Formation	Glendon Limestone Member of Byram Formation, Marianna Limestone, Red Bluff Clay, and Ocala Limestone	Yazoo Clay, Moodys Branch Formation	Gosport Sand	Lisbon Formation
Oil test	NE¼NE¼ sec. 20, T. 2 N., R. 8 E.	311	0-470	470-600	600-700	700-805	805-825	825-945
Do.	SW¼NE¼ sec. 34, T. 2 N., R. 8 E.	210	0-500	500-640	640-735	735-820	820-855	855-1,000
Do.	SW¼SE¼ sec. 2, T. 2 N., R. 9 E.	211	....	.....	385-465	465-570	570-590	590-725
Do.	SW¼SW¼ sec. 11, T. 2 N., R. 9 E.	236	....	.....	.....	-630	630-650	650-770
Do.	SW¼SW¼ sec. 20, T. 2 N., R. 9 E.	241	....	.....	500-585	585-690	690-710	710-835
Do.	SW¼SW¼ sec. 33, T. 2 N., R. 9 E.	337	....	*527-610	610-695	695-805	805-830	830-965
Do.	SW¼SW¼ sec. 30, T. 2 N., R. 10 E.	205	0-310	310-450	450-525	525-620	620-645	645-805
Do.	NE¼SW¼ sec. 9, T. 2 N., R. 11 E.	232	....	.....	.....	.....	.....	-670
Do.	SE¼SE¼ sec. 19, T. 2 N., R. 11 E.	163	....	.....	.....	385-490	490-510	510-665
Do.	NW¼NW¼ sec. 31, T. 2 N., R. 13 E.	240	....	.....	365-430	430-500	500-515	515-655
Do.	SE¼SE¼ sec. 3, T. 1 N., R. 12 E.	205	....	.....	.....	.....	540-565	565-700
Do.	NE¼SW¼ sec. 15, T. 1 N., R. 12 E.	172	....	.....	*390-450	450-555	555-580	580-710
Do.	SE¼NW¼ sec. 21, T. 1 N., R: 12 E.	174	....	.....	.....	*524-585	585-610	610-755
Do.	NW¼NW¼ sec. 17, T. 1 N., R. 11 E.	122	....	.....	.....	*518-555	555-575	575-750
Do.	NW¼NW¼ sec. 30, T. 1 N., R. 11 E.	244	....	.....	540-620	620-730	730-750	750-930
Do.	SE¼NW¼ sec. 36, T. 1 N., R. 11 E.	205	....	.....	490-570	570-680	680-705	705-875

Do.	SW¼SW¼ sec. 5, T. 1 N., R. 10 E.	70	....	.....	.....	*415-505	505-520	520-685
Do.	SW¼NW¼ sec. 7, T. 1 N., R. 10 E.	63	....	.....	.....	-550	550-570	570-720
Do.	SE¼SW¼ sec. 15, T. 1 N., R. 10 E.	99	....	*300-410	410-490	490-610	610-620	620-790
Do.	SE¼SE¼ sec. 3, T. 1 N., R. 9 E.	186	....	.....	540-630	630-725	725-745	745-890
Do.	NW¼NW¼ sec. 6, T. 1 N., R. 9 E.	95	....	.....	*510-570	570-680	680-700	700-860
Do.	SE¼NW¼ sec. 18, T. 1 N., R. 9 E.	194	....	*515-675	675-760	760-850	850-875	875-1,025
Do.	SW¼NE¼ sec. 22, T. 1 N., R. 9 E.	65	....	.....	500-585	585-705	705-720	720-865
Do.	SE¼NW¼ sec. 29, T. 1 N., R. 9 E.	64	....	*415-530	530-605	605-720	720-735	735-870
Do.	NW¼SE¼ sec. 32, T. 1 N., R. 9 E.	57	....	.....	.....	.....	.....	-940
Do.	SE¼SE¼ sec. 2, T. 1 N., R. 8 E.	117	....	*420-560	560-650	650-740	740-760	760-920
Do.	SE¼SW¼ sec. 4, T. 1 N., R. 8 E.	232	....	.....	.....	*825-905	905-925	925-1,070
Do.	NW¼NE¼ sec. 7, T. 1 N., R. 8 E.	244	0-580	580-735	735-860	860-915	915-935	935-1,050
Do.	SE¼NE¼ sec. 10, T. 1 N., R. 8 E.	237	0-565	565-720	720-820	820-895	895-915	915-1,075
Do.	SE¼SE¼ sec. 11, T. 1 N., R. 8 E.	154	0-470	470-630	630-730	730-810	810-830	830-960
Do.	SW¼NW¼ sec. 13, T. 1 N., R. 8 E.	81	....	*520-560	560-650	650-740	740-760	760-900
Do.	SW¼NE¼ sec. 10, T. 1 N., R. 7 E.	215	0-570	570-750	750-870	870-930	930-950	950-1,100
Do.	NE¼SE¼ sec. 21, T. 1 N., R. 7 E.	284	0-675	675-840	840-945	945-1,000	1,000-1,025	1,025-1,135
Do.	NE¼NW¼ sec. 26, T. 1 N., R. 7 E.	247	0-620	620-790	790-900	900-945	945-960	960-1,090
Do.	NE¼SE¼ sec. 1, T. 1 N., R. 6 E.	277	0-665	665-820	820-940	940-990	990-1,015	1,015-1,150

Table 6.—*Depth of geologic units based on electric logs of water and oil test wells, Escambia County*—Continued

Well	Location	Altitude of land surface (feet)	Depths penetrated					
			Citronelle Formation and Miocene Series	Chickasawhay Limestone and Bucatunna Clay Member of Byram Formation	Glendon Limestone Member of Byram Formation, Marianna Limestone, Red Bluff Clay, and Ocala Limestone	Yazoo Clay, Moodys Branch Formation	Gosport Sand	Lisbon Formation
Oil test	SE¼NE¼ sec. 12, T. 1 N., R. 6 E.	269	0-695	695-850	850-935	935-1,020	1,020-1,040	1,040-1,190
Do.	NW¼NW¼ sec. 14, T. 1 N., R. 6 E.	296	0-665	665-840	840-950	950-1,015	1,015-1,030	1,030-1,150
Do.	SE¼SE¼ sec. 25, T. 1 N., R. 6 E.	262	0-700	700-890	890-985	985-1,050	1,050-1,060	1,060-1,170
Do.	NW¼SE¼ sec. 3, T. 1 N., R. 5 E.	293	0-695	695-885	885-985	985-1,050	1,050-1,065	1,065-1,180
A- 1	NW¼NE¼ sec. 5, T. 3 N., R. 13 E.	161	....	.....	.....	* 65-126	.....	.....
A- 4	NW¼NE¼ sec. 7, T. 3 N., R. 13 E.	147	....	.....	.....	75-200	200-220	*220-227
A- 7	SE¼NW¼ sec. 8, T. 3 N., R. 13 E.	137	....	.....	.....	* 54-163	.....	.....
A-13	NW¼NE¼ sec. 19, T. 3 N., R. 13 E.	156	....	.....	.....	*135-180	.....	.....
A-15	SW¼SE¼ sec. 20, T. 3 N., R. 13 E.	120	....	.....	.....	* 85-154	.....	.....
A-16	SW¼NE¼ sec. 29, T. 3 N., R. 13 E.	123	....	.....	* 22-80	* 80-168	.....	.....
D-15	SW¼SW¼ sec. 11, T. 3 N., R. 10 E.	169	....	.....	*120-190	*190-296	.....	.....
F-13	SE¼NE¼ sec. 23, T. 3 N., R. 8 E.	176	....	.....	*302-363	*363-376	.....	.....
O-73	SW¼NE¼ sec. 13, T. 2 N., R. 10 E.	117	....	.....	*209-280	.....	.....	.....
O-79	SE¼NE¼ sec. 8, T. 2 N., R. 10 E.	165	....	*240-317	317-405	.....	.....	.....
O-85	SE¼SE¼ sec. 18, T. 2 N., R. 10 E.	135	....	.....	*323-392	392-500	500-515	515-665

O-132	NE¼SW¼ sec. 28, T. 2 N., R. 10 E.	80	....	.....	*290-345	345-450	450-475	*475-500
O-138	NW¼NW¼ sec. 28, T. 2 N., R. 10 E.	113	....	.....	305-380	380-494	494-506	*506-547
O-140	NE¼NE¼ sec. 29, T. 2 N., R. 10 E.	118	....	.....	.....	.....	.....	*577-617
O-141	NE¼NE¼ sec. 29, T. 2 N., R. 10 E.	90	0-155	155-285	285-360	360-455	455-480	480-630
O-147	NE¼SE¼ sec. 29, T. 2 N., R. 10 E.	77	....	.....	.....	.....	.....	*576-596
O-150	SE¼SW¼ sec. 29, T. 2 N., R. 10 E.	155	0-229	229-366	366-440	440-546	546-565	565-720
P-30	NW¼SW¼ sec. 29, T. 2 N., R. 11 E.	...	....	.....	250-337	.....	.....	.....
P-39	NE¼SE¼ sec. 35, T. 2 N., R. 10 E.	91	....	.....	.....	*295-402	.....	.....
Q-58	SE¼SE¼ sec. 16, T. 2 N., R. 12 E.	101	....	26-99	99-195	*195-203	.....	.....
Q-65	NW¼NW¼ sec. 28, T. 2 N., R. 12 E.	104	....	97-152	*152-160	.....	.....	.....
R- 7	NW¼SW¼ sec. 4, T. 2 N., R. 13 E.	116	....	.....	.....	*145-217	.....	.....
R- 9	NE¼SE¼ sec. 6, T. 2 N., R. 13 E.	110	....	.....	*107-125	125-223	.....	.....
V- 1	NE¼NE¼ sec. 1, T. 1 N., R. 10 E.	84	....	.....	*300-310	.....	.....	.....
V- 9	SW¼NW¼ sec. 2, T. 1 N., R. 10 E.	85	....	.....	284-362	362-485	485-500	*500-540
V-21	NE¼NE¼ sec. 5, T. 1 N., R. 10 E.	89	....	.....	333-398	398-505	505-520	*520-560
V-36	NE¼NE¼ sec. 13, T. 1 N., R. 10 E.	87	0-205	205-345	345-420	420-535	535-560	*560-710
V-42	NW¼SW¼ sec. 17, T. 1 N., R. 10 E.	76	0-265	265-375	375-462	.....	.....	.....
W- 4	NE¼SE¼ sec. 1, T. 1 N., R. 9 E.	108	0-250	250-390	390-465	465-575	575-588	588-738

* Top or bottom of electric log data, full thickness of geologic unit not penetrated.

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*

(Well numbers correspond with those shown in plate 1 and tables 2, 4, 5, and 6.)

	Thickness (feet)	Depth (feet)
Well D-23		
Owner: E. C. Johnson Driller: Etheridge Plumbing Co.		
Chalk, sandy	20	20
Sand	35	55
Chalk	80	135
Sand	25	160
Well D-33		
Owner: Buck Burnham Driller: Etheridge Plumbing Co.		
Sand, red, coarse	20	20
Sand, pink and white, coarse, with sandy clay layers	45	65
Sand, white, coarse, with fine gravel	15	80
Well D-36		
Owner: Philip Andrews Driller: Flo Drilling Co.		
Sand, clayey	40	40
Sand, red	40	80
Sand, white, medium to coarse	40	120
Well D-39		
Owner: C. H. Massingill Driller: Etheridge Plumbing Co.		
Clay and gravel, sandy	20	20
Sand and chalk, hard	50	70
Sand	20	90

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well D-66		
Owner: W. D. Barrow Driller: Etheridge Plumbing Co.		
Sand, red, fine to medium	20	20
Sand, white, fine to medium	20	40
Clay, white, yellow	40	80
Sand, white, fine	40	120
No record	42	162
Clay, gray to yellow, fine, sandy	48	210
Sand, medium to coarse, and clay	12	222
Sand, very coarse, and gravel	6	228
Clay, bluish green	4	232
Limestone, tan to gray, sandy	10	242
Clay, dark gray, lumpy	95	337
Limestone, white to light gray, fossiliferous	40	377
Limestone, white, sandy, soft, fossiliferous	51	428
Well E-4		
Owner: R. F. Lowrey Driller: Etheridge Plumbing Co.		
Sand	20	20
Clay	10	30
Sand and gravel	27	57
Well E-12		
Owner: Floyd Madden Driller: Etheridge Plumbing Co.		
Sand	40	40
Clay, sandy	10	50
Sand and gravel	10	60
Clay, sandy	40	100
Sand	20	120
Well E-45		
Owner: J. L. Burch Driller: Marcus Blair		

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well E-45--Continued		
Clay with sand layers	105	105
Sand	15	120
Clay	30	150
Sand	30	180
Limestone with sand layers	16	196
Sand	14	210
Limestone	5	215
Clay, dark gray to brown, sandy	70	285
Limestone, gray, soft, fossiliferous	95	380
Clay, greenish, sandy	20	400
Well E-57		
Owner: W. C. Madden	Driller: Flo Drilling Co.	
Surface sand and gravel	5	5
Clay, red to white	10	15
Sand, coarse to very coarse	30	45
Well F-3		
Owner: W. F. Watson	Driller: Etheridge Plumbing Co.	
Clay	40	40
Sand and gravel	18	58
Clay and sandy clay	192	250
Sand, coarse	20	270
Well F-29		
Owner: Albert Bell	Driller: Etheridge Plumbing Co.	
Clay	20	20
Sand	30	50
Sand and gravel	35	85

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well H-25		
Owner: Escambia County Board of Education Driller: Etheridge Plumbing Co.		
Clay	10	10
Sand, red	10	20
Sand and gravel	10	30
Pea gravel	25	55
Well H-39		
Owner: M. F. Etheridge Driller: Etheridge Plumbing Co.		
Clay	10	10
Sand, red	13	23
Sand and gravel	50	73
Well H-43		
Owner: W. C. Keller Driller: Etheridge Plumbing Co.		
Clay	10	10
Sand and gravel	35	45
Well H-46		
Owner: P. L. Dees Driller: P. L. Dees		
Clay	18	18
Sand	17	35
Chalk and sand	60	95
Sand, coarse	3	98
Well H-51		
Owner: D. Parker Driller: D. Parker		

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well H-51--Continued		
Clay	20	20
Sand and gravel	20	40
Clay	5	45
Sand and gravel	17	62
Well H-68		
Owner: Hauss State Forestry Nursery — Driller: Layne-Central Co.		
Clay, red, sandy	15	15
Clay, yellow, sandy	20	35
Clay	10	45
Sand, fine, and gravel with clay streaks	22	67
Sand and gravel	22	89
Sand, coarse, with yellow clay balls	23	112
Clay	17	129
Shale, sandy	5	134
Sand	5	139
Shale, gummy	17	156
Sand, coarse, with clay balls	55	211
Clay	12	223
Clay, sandy	3	226
Sand, packed	28	254
Clay, sandy	11	265
Sand	17	282
Shale	8	290
Well I-11		
Owner: Robert Hadley, Jr. — Driller: Etheridge Plumbing Co.		
Surface soil	5	5
Clay, sandy	13	18
Sand and gravel	30	48

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well I-20		
Owner: R. D. Morgan Driller: Etheridge Plumbing Co.		
Clay	20	20
Sand and gravel	23	43
Well J-5		
Owner: Frank Currie Gin Co. Driller: Etheridge Plumbing Co.		
Clay	20	20
Sand and gravel	30	50
Sand	5	55
Sand and gravel	25	80
Well J-7		
Owner: Escambia County Board of Education Driller: Etheridge Plumbing Co.		
Clay	10	10
Sand and gravel	40	50
Clay	5	55
Sand and gravel	25	80
Well J-32		
Owner: John Steadham Driller: Etheridge Plumbing Co.		
Clay	20	20
Sand and gravel	32	52
Well J-39		
Owner: Rob Rolin Driller: Etheridge Plumbing Co.		
Clay	10	10

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well J-39--Continued		
Sand and gravel	30	40
Well J-40		
Owner: Adam Daughtery Driller: Etheridge Plumbing Co.		
Clay	18	18
Sand and gravel	32	50
Well J-53		
Owner: Tracy Rolin Driller: Etheridge Plumbing Co.		
Sand, red, and gravel	30	30
Sand, white, and gravel	30	60
Well J-54		
Owner: Eugene Sells Driller: Etheridge Plumbing Co.		
Clay	15	15
Sand and gravel	45	60
Well J-55		
Owner: Will McGhee Driller: Etheridge Plumbing Co.		
Clay	20	20
Sand and gravel	40	60
Well J-56		
Owner: A. D. Martin Driller: Etheridge Plumbing Co.		
Sand, yellow	10	10

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well J-56--Continued		
Sand and gravel	47	57
Well J-63		
Owner: W. E. James	Driller: Etheridge Plumbing Co.	
Clay	20	20
Sand and gravel	35	55
Clay	30	85
Sand	28	113
Well J-69		
Owner: I. H. Lamar	Driller: Etheridge Plumbing Co.	
Clay, sandy	20	20
Sand	10	30
Sand and gravel	25	55
Well K-1		
Owner: Atmore State Prison Farm	Driller: Gray Artesian Well Co.	
Sandy soil, red	25	25
Sand	33	58
Sand and heavy gravel	47	105
Gumbo	31	136
Water sand	40	176
Well K-7		
Owner: M. O. Davis	Driller: Etheridge Plumbing Co.	
Clay	10	10
Sand, red, and gravel	20	30

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well K-7--Continued		
Sand, white, and gravel	39	69
Well K-8		
Owner: Clyde Purnell Driller: Etheridge Plumbing Co.		
Clay	20	20
Sand and gravel	71	91
Well K-10		
Owner: Atmore State Prison Farm Driller: Etheridge Plumbing Co.		
Clay, red, sandy	20	20
Sand and gravel	15	35
Clay	20	55
Sand and gravel	27	82
Well K-18		
Owner: E. M. Terry Driller: Rufus Bell		
Clay	20	20
Sand, red	20	40
Sand and gravel	30	70
Clay	18	88
Sand and gravel	15	103
Well L-13		
Owner: J. P. Booth Driller: Etheridge Plumbing Co.		
Clay	10	10
Sand, red	10	20
Sand and gravel	25	45
Clay	5	50

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well L-13--Continued		
Sand and gravel	35	85
Well L-20		
Owner: J. L. English Driller: Etheridge Plumbing Co.		
Clay	20	20
Sand and gravel	40	60
Clay	40	100
Sand and pea gravel	20	120
Well L-23		
Owner: Pete Sellers Driller: Etheridge Plumbing Co.		
Clay	20	20
Sand and gravel	50	70
Clay	5	75
Sand and gravel	43	118
Well L-25		
Owner: F. A. Steward Driller: Etheridge Plumbing Co.		
Clay	20	20
Sand and gravel	40	60
Clay	5	65
Sand	15	80
Clay	5	85
Sand and gravel	25	110
Well L-28		
Owner: A. B. Bell Driller: Etheridge Plumbing Co.		
Clay	20	20

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well L-28--Continued		
Sand	30	50
Sand and gravel	35	85
Well L-29		
Owner: L. B. Moye Driller: Etheridge Plumbing Co.		
Clay	20	20
Sand and gravel	15	35
Clay	23	58
Sand and gravel	15	73
Well M-2		
Owner: R. W. Odom Driller: Etheridge Plumbing Co.		
Clay	10	10
Sand and gravel	10	20
Clay	80	100
Sand	20	120
Clay, sandy	20	140
Sand	30	170
Clay	30	200
Sand	20	220
Lime, hard	40	260
Shale	10	270
Sand	50	320
Shale	70	390
Lime, soft	20	410
Well M-9		
Owner: Archie Strength Driller: Etheridge Plumbing Co.		
Sand, red	40	40
Sand, white, and gravel	70	110

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well M-28		
Owner: J. B. Godwin Driller: Etheridge Plumbing Co.		
Clay	10	10
Sand and gravel	70	80
Well M-31		
Owner: Otis Emmons Driller: Etheridge Plumbing Co.		
Clay, sandy	20	20
Sand and gravel	40	60
Sand	20	80
Well N-7		
Owner: J. C. Shenk Driller: Etheridge Plumbing Co.		
Clay	20	20
Sand	10	30
Clay	10	40
Sand and gravel	55	95
Well N-18		
Owner: Carl Chavers Driller: Etheridge Plumbing Co.		
Clay, red	30	30
Sand and gravel	20	50
Well N-19		
Owner: F. M. Chavers Driller: Etheridge Plumbing Co.		
Clay	20	20
Sand and gravel	28	48
Clay	42	90

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well N-19--Continued		
Sand, yellow	15	105
Clay	19	124
No record	121	245
Sand and pea gravel	25	270
Well N-24		
Owner: B. S. Blackmon Driller: Ervin Carnley		
Clay and sand	15	15
Sand, varicolored	18	33
Sand, coarse, and pea gravel, with large white and yellow gravel	14	47
Sand, white, coarse, with scattered large white gravel	27.5	74.5
Well N-25		
Owner: William Blackmon Driller: Etheridge Plumbing Co.		
Sand, red	10	10
Clay	10	20
Sand	10	30
Sand and small gravel	10	40
Clay	130	170
Sand, fine	10	180
Clay and lignite	12	192
Sand, coarse, and pea gravel	25	217
Well N-30		
Owner: Roy Smith Driller: Etheridge Plumbing Co.		
Clay	10	10
Sand	18	28
Clay	12	40
Sand	5	45
Clay	10	55

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well N-30--Continued		
Sand	25	80
Well O-16		
Owner: R. B. Hawk Driller: Gray Artesian Well Co.		
Clay, sandy	25	25
Sand, chalky	15	40
Clay, sandy	28	68
Sand, firm	8	76
No record	4	80
Marl, soft	24	104
Marl, stiff	16	120
Sand, chalky	10	130
Sand, firm	24	154
Marl	31	185
Sand, water	12	197
Sand, firm, water	9	206
Rock, sandy	6	212
*Well O-17		
Owner: R. B. Hawk Driller: Gray Artesian Well Co.		
Clay, pink, sandy	10	10
Clay, pink, sand with white gravel	10	20
Clay, pink, sandy, with coarse sand and fine gravel	10	30
Clay, varicolored, sandy	67	97
Sand	8	105
Clay, varicolored, sandy	30	135
Sand, yellow, medium-grained, clayey	20	155
Clay, varicolored, sandy	40	195
Sand, white, fine to coarse-grained	15	210
Clay, black, sandy	5	215
Limestone, tan or gray, dolomitic, with abundant shell fragments	30	245
Cavity	1	246

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
*Well O-17--Continued		
* Log by J. W. Cagle, U.S. Geological Survey		
Well O-18		
Owner: H. E. Long Driller: Marcus Blair		
Clay, red	15	15
Sand, red, fine	35	50
Sand, coarse, with fine to medium gravel	35	85
Clay, sandy, with sand layers	142	227
Clay, dark gray or black	6	233
Limestone	32	265
Clay, black or dark gray, sandy	73	338
Limestone, white, soft, fossiliferous	92	430
Well O-55		
Owner: North Brewton Baptist Church Driller: Flo Drilling Co.		
Sand, clayey, and sand	170	170
Sand, fine to medium (lost circulation)	22	192
Clay, green, sandy	5	197
Limestone, tan, sandy	43	240
Well O-71		
Owner: Marcus Jordan Driller: Etheridge Plumbing Co.		
Surface soil	10	10
Clay	30	40
Sand	5	45
Chalk with sand streaks	85	130
Sand	26	156

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

*Well O-76

Owner: C. O. Waters Driller: Flo Drilling Co.

	Thickness (feet)	Depth (feet)
Sand, red, coarse to fine	13	13
Sand, red, medium to fine	10	23
Clay, white to pink, sandy, with gravel and sand streaks	10	33
Clay, pink, sandy, gravel layers	20	53
Clay, white to pink, sandy	20	73
Clay, white, sandy	60	133
Clay, gray, sandy	15	148
Sand, very fine to medium	15	163
Clay, blue, with coarse gravel	10	173
Sand, coarse	3	176
Limestone, blue-gray, sandy (cavity from 180 to 183)	7	183

* Log by B. L. Bailey, U.S. Geological Survey

Well O-82

Owner: S. L. Smith Driller: Etheridge Plumbing Co.

	Thickness (feet)	Depth (feet)
Clay	45	45
Iron rock	5	50
Clay, sandy	93	143
Sand	20	163

*Well O-86

Owner: Hunter Sherrer Driller: Marcus Blair

	Thickness (feet)	Depth (feet)
Clay, red, sandy	10	10
Clay, tan, sandy, soft	10	20
Clay, white and pink, sandy	10	30
Sand, white, medium to coarse	18	48
Clay, pink to white, sandy	12	60
Clay, pink to white, sandy, with sand streaks	20	80
Clay, dark gray, with sand layers	15	95
Sand, white, fine to coarse	5	100

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
*Well O-86--Continued		
Sand, white, fine to coarse, with sandy clay layers	10	110
Clay, pink to light gray, sandy	10	120
Clay, pink to light gray, with sand layers	7	127
Sand, white, medium to coarse, with sandy clay streaks	33	160
Sand, tan	5	165
Sand and clayey sand	15	180
Limestone, tan, dolomitic, crumbly, with sand and sandy clay streaks	10	190
Clay, greenish-gray, sandy, with limestone streaks	10	200
Limestone, tan, sandy, crumbly with clayey sand and marl streaks	17	217
No record	433	650

* Log by J. W. Cagle, U.S. Geological Survey

Well O-89

Owner: D. P. Liles Driller: Flo Drilling Co.

	Thickness (feet)	Depth (feet)
Sand, yellow, very coarse	35	35
Sand, yellow, clayey, and clay, gray, white, black, sandy, lumpy	50	85
Sand, coarse, and pea gravel	18	103
Clay, dark gray to black	5	108

*Well O-93

Owner: Flourney Lovelace Driller: Flo Drilling Co.

	Thickness (feet)	Depth (feet)
Sand, red, clayey	23	23
Clay, sandy	50	73
Clay, blue to yellow, sandy	30	103
Sand, fine	20	123
Clay, gray, sandy	9	132
Sand, fine, with clay layers	11	143
Sand, fine	17	160
Sand, coarse, with pea gravel	13	173

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
*Well O-93--Continued		
Sand, fine to coarse	7	180
Limestone, tan, sandy, granular	23	203
Sand, fine	10	213
Clay, dark gray to black, sandy	70	283
Clay, dark gray, sandy, and dark gray slightly fossiliferous shale	30	313
Limestone, white, fossiliferous	40	353
Limestone, white, fossiliferous, and fine sand	47	400

* Log by J. W. Cagle, U.S. Geological Survey

Well O-95

Owner: City of Brewton Driller: Layne-Central Co.

	Thickness (feet)	Depth (feet)
Clay	12	12
Clay and gravel	9	21
Clay	46	67
Clay, sandy	23	90
Clay, soft streak	67	157
Sand and clay streaks	34	191
Clay	3	194
Lime rock	51	245
Shale	89	334
Lime	113	447
Shale	69	516
Sand and lime breaks (water sand)	25	541
Shale	20	561
Sand and lime breaks	23	584
Sand	12	596
Shale	12	608
Lime rock	4	612
Shale	4	616
Lime rock	17	633
Shale	10	643
Sand and small breaks	23	666
Shale	30	696

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well O-105		
Owner: Isaac House Driller: J. O. O'Farrell		
Sand, red	20	20
Clay, varicolored, sandy, soft	30	50
Clay, light gray, sandy	20	70
Clay	160	230
Sand, white, fine to medium	30	260
Well O-110		
Owner: Collins Johnson Driller: Etheridge Plumbing Co.		
Chalk, sandy	20	20
Sand	35	55
Clay	80	135
Sand (water)	25	160
*Well O-111		
Owner: T. R. Miller Co. Driller: Marcus Blair		
Gravel, white, small to large, and sand, fine to coarse	18	18
Clay, blue, sandy	12	30
Sand, white, fine to medium	28	58
Clay, light gray, sandy	7	65
Clay, light gray, sandy, with sand layers	5	70
Sand, tan or gray, fine to medium	30	100
Sand, tan or gray, fine to coarse	25	125
Clay, blue, sandy	9	134
Limestone, tan or gray, sandy, dolomitic, crumbly	15	149
Sand, white, fine to coarse, micaceous	9	158
Limestone with sand layers	12	170
Clay, dark gray, sandy, lignitic	87	257
Limestone and marl, light gray, soft, fossiliferous	86	343
Clay, green	7	350
Clay, gray, sandy	60	410
Marl, gray, sandy, fossiliferous	35	445

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
*Well O-111--Continued		
Sand, tan, fine to medium, glauconitic	50	495
Limestone and marl, fossiliferous	20	515
Sand, fine to medium, glauconitic, with limestone breaks	15	530
Limestone, dark gray, fossiliferous	5	535
Sand, glauconitic	5	540
No record	45	585
Sand, medium to very coarse, glauconitic	30	615
Clay, greenish-gray, plastic	35	650

* Log by J. W. Cagle, U.S. Geological Survey

*Well O-129

Owner: Brewton Iron Works Driller: Etheridge Plumbing Co.

	Thickness (feet)	Depth (feet)
Clay, blue	10	10
Clay, fine to coarse	6	16
Clay, with gravel	5	21
Clay, light gray, with gravel	20	41
Clay, dark gray, sandy	20	61
Sand, light gray, clayey	21	82
Sand, tan, medium	41	123
Clay, blue gray, limey	15	138
Limestone, greenish-gray, dolomitic, with limey clay lenses	5	143
Limestone, tan to brownish gray, dolomitic	10	153
Limestone, tan to dark gray, dolomitic, fossil fragments	11	164
Clay, gray to brown, hard, sticky	9	173
Sand, white, fine, glauconitic, with clay streaks	59	232
Clay, brown to dark gray, sticky, lignitic	1	233

* Log by B. L. Floyd, U.S. Geological Survey

Well O-146

Owner: City of Brewton Driller: A. Kimbrough

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well O-146--Continued		
Clay, sandy	18	18
Sand, cream	5	23
Clay, red, sandy	9	32
Marl, black	66	98
Marl, sandy, and clay	24	122
Sand	43	165
Sand, cream	8	173
Lime rock	30	203
Rock, hard	21	224
Marl, blue	86	310
Lime rock, shells	56	366
Shells, sand	4	370
Lime rock, hard	2	372
Lime rock, soft	32	404
Marl, blue, shells	20	424
Lime rock, soft	60	484
Sand, cream, shells	16	500
Sand marl	10	510
Lime rock, hard	13	523
Marl, blue	8	531
Lime rock, hard	8	539
Lime rock, soft	4	543
Sand	3	546
Marl, blue	16	562
Rock, hard	8	570
Sand	18	588
Sand rock, hard	3	591
Rock, soft	4	595
Marl, sandy	37	632
Sand, cream	24	656
Rock, hard	26	682
Sand	3	685
Rock, hard	2	687
Marl, sandy	7	694
Rock, hard	10	704
Shale, hard	12	716
Sand, white	3	719
Shells	22	741
Rock, hard	1	742
Sand, fine	2	744

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well O-146--Continued		
Rock, hard	8	752
Sand, fine	14	766
Rock, hard	2	768
Sand, fine	17	785
Rock, hard	2	787
Sand rock, soft	6	793
Rock, hard	2	795
Shells, soft	7	802
Rock, hard	13	815
Shells, soft	9	824
Rock, hard	2	826
Sand	25	851
Rock, hard	2	853
Sand	77	930
Marl, blue	3	933
Rock, soft	7	940
*Well Q-150		
Owner: City of Brewton	Driller: Layne-Central Co.	
Clay, red to yellow	12	12
Sand, medium to very coarse	19	31
Sand, medium to very coarse, with gray clay	11	42
Clay, with gravel	6	48
Clay, yellow, with sand streaks	23	71
Clay, yellow, with sand	4	75
Clay, blue, with dark gray clay balls	10	85
Sand, white, fine to medium	6	91
Clay, blue, hard	21	112
Clay, blue and yellow, sandy	63	175
Sand, white, medium, well sorted	40	215
Sand, gray, medium to very coarse	14	229
Clay, blue, hard	3	232
Limestone, blue to gray, fossiliferous	13	245
Sand, black and white, fine	36	281
Sand, fine to coarse, with clay	12	293
Sand, black and white, fine, with clay streaks	33	326
Clay, brown, some lignite and limestone	12	338

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
*Well O-150--Continued		
Clay, brown, sandy, some lignite	16	354
Sand, black and white, fine, some clay	7	361
Clay, gray, marly	5	366
Limestone, gray, hard, fossiliferous	6	372
Limestone, white, hard, with soft streaks, some blue marl	82	454
Sand, white, fine to medium, glauconitic, very fossiliferous	23	477
Limestone and marl, green-gray, glauconitic, fossiliferous	56	533
Limestone and marl, green-gray, glauconitic, fossiliferous, abundant large foraminifera	12	545
Greensand, medium, very glauconitic, with limestone streaks	19	564
Limestone and marl, green-gray, glauconitic, fossiliferous, abundant large foraminifera. Some very hard streaks	33	597
Sand, white, very fine to medium, glauconitic, angular, with lime breaks	36	633
Limestone or marl	3	636
Sand, white, very fine to medium, glauconitic, angular	13	649
Limestone or marl	2	651
Sand, white, very fine to medium, glauconitic, angular	4	655
Limestone or marl	5	660
Sand, white, very fine to fine, glauconitic, angular, with lime breaks	28	688
Sand, white, medium to coarse, rounded to subangular	33	721
Rock, very hard	5	726
Shale, gray-green, massive, hard	25	751
Limestone, cream white, indurated, very hard, fossiliferous	2	753
Sand, white, very fine to fine	6	759
Limestone or marl, green-gray to white, indurated, very hard	6	765
Limestone or marl, green-gray to olive gray, fine, glauconitic, fossiliferous, with sand breaks	28	793

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
*Well O-150--Continued		
Limestone or marl, with dark gray shale and thin sand streaks	12	805
Limestone or marl with sand streaks, fossiliferous	18	823
Sand, white, fine, glauconitic, with lime breaks	7	830
Limestone or marl, green-gray to olive gray, glauconitic, fossiliferous, with fine sand breaks	8	838
Sand, white, fine, glauconitic	6	844
Limestone or marl, green-gray to olive gray, glauconitic, fossiliferous, with fine sand streaks	24	868
Sand	7	875
Shale or clay, gray-green, carboniferous or glauconitic	41	916
Greensand, medium to coarse, angular, glauconitic	14	930
Greensand, fine to medium, angular, glauconitic	87	1,017
Limestone, gray and white, dense, very hard, fossiliferous	1	1,018

* Log by B. L. Floyd, U.S. Geological Survey

Well O-151

Owner: Clyde F. O'Bannon, Jr. Driller: Etheridge Plumbing Co.

	Thickness (feet)	Depth (feet)
Clay, sandy	15	15
Clay	25	40
Sand	23	63

Well O-152

Owner: Thomas Lewis Driller: H. Bates

	Thickness (feet)	Depth (feet)
Sand, red, fine	10	10
Sand, white to red, fine to medium	10	20
Sand, medium to coarse	10	30
Clay	3	33

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well O-159		
Owner: A. Stewart O'Bannon Driller: Etheridge Plumbing Co.		
Clay	35	35
Sand	20	55
Clay	95	150
Sand and fine gravel	20	170
*Well O-161		
Owner: Jim Gibson Driller: Etheridge Plumbing Co.		
Clay and soil	10	10
Clay, gray to red, with gravel	10	20
Clay, tan to yellow, plastic	20	40
Clay, tan to red, plastic	10	50
Clay, tan to red, sandy	10	60
Sand, white to tan, medium to coarse, poorly sorted, with chalky clay	10	70
Clay, gray to yellow, sandy	10	80
Clay, blue to gray, sandy	50	130
Clay, tan, sandy	10	140
Clay, blue to gray, with shale and fossils	10	150
Clay, brown, plastic	20	170
Clay and sand	30	200
Clay, tan, plastic to sandy	20	220
Sand, white, medium to coarse, well sorted	40	260

* Log by B. L. Floyd, U.S. Geological Survey

	Thickness (feet)	Depth (feet)
Well O-162		
Owner: Southern Pine Coop. Assoc. Driller: Layne-Central Co.		
Clay, sandy	6	6
Sand and gravel	25	31
Sand and clay	28	59
Rock, soft	2	61
Clay	37	98

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well O-162--Continued		
Clay, sandy	11	109
Clay	17	126
Clay, soft	14	140
Sand, soft, muddy	10	150
Sand, fine, draggy	29	179
Sand, packed	39	218
Clay	2	220
Well O-174		
Owner: City of East Brewton Driller: Layne-Central Co.		
Clay, sandy, and gravel	17	17
Sand	4	21
Rock	10	31
Sand and clay balls	23	54
Clay	7	61
Sand, muddy	12	73
Shale	25	98
Sand, muddy	14	112
Sand, fine, packed	35	147
Clay	1	148
Sand, fine, hard, draggy	13	161
Sand (cut good), white, medium grained	45	206
Clay	13	219
Sand, fine, and lime rock	4	223
Lime rock and shale	39	262
Shale	96	358
Lime rock and shale	47	405
Shale and streaks lime rock	19	424
Lime rock	15	439
Shale and lime rock breaks	76	515
Lime rock	33	548
Sand	3	551
Hard lime with shale	6	557
Shale	28	585
Lime rock and shale	15	600
Sand, draggy	12	612
Shale and lime rock	5	617

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well O-174--Continued		
Sand and rock breaks	19	636
Lime rock, hard	12	648
Sand, fine	6	654
Shale	10	664
Shale and lime rock breaks	13	677
Sand	32	709
Shale	2	711
*Well Q-49		
Owner: Gid White Driller: Flo Drilling Co.		
Sand, yellow to white, fine to coarse	23	23
Clay, blue to yellow, sandy	10	33
Clay, blue, calcareous, and angular gravel	19	52
Limestone	1	53
Clay, black	10	63
Clay, black, with large gravel	10	73
Clay, black, sandy, fossiliferous	10	83
Clay, black, sandy with lime streaks	10	93
Sand, coarse, angular, calcareous	2	95
Limestone, sandy, fossiliferous	3	98
Limestone, white, fossiliferous, hard	7	105
Limestone, white, soft, fossiliferous	24	129
Limestone, white, hard, fossiliferous	24	153
Limestone, white, soft, fossiliferous	20	173
* Log by B. L. Bailey, U.S. Geological Survey		
Well Q-64		
Owner: George Wiggins Driller: Isaac Nearer		
Clay, red, and chalk	45	45
Sand, fine, dry	32	77
Gravel and sand	16	93

Table 7.—Drillers' logs of wells in Escambia County, Ala.—Continued

	Thickness (feet)	Depth (feet)
Well Q-76		
Owner: A. C. Cook Driller: Flo Drilling Co.		
Clay, sandy	13	13
Sand, coarse	30	43
Gravel	10	53
Gravel and clay	20	73
Clay, sandy	10	83
Sand	10	93
Clay, sandy	10	103
Clay, sandy, with hard streaks	10	113
Clay, white to pink, sandy	15	128
Clay, blue, with 6-inch hard streak at base	25	153
Clay, dark gray to black	42	195
Limestone, white to light gray, fossiliferous (bottom 30 feet very soft)	98	293
Well S-30		
Owner: W. J. Taylor Driller: Flo Drilling Co.		
Chalk	68	68
Sand (fine at top becoming coarse toward bottom)	24	92
Well U-13		
Owner: Clinton G. Pearson Driller: Albert Beasley		
Surface clay	10	10
Sand, white, coarse (dry)	45	55
Clay and sandy clay, pink and white	35	90
Sand, medium, with sandy clay streaks	10	100
Sand, white, coarse	7	107
Sand, white, coarse, with fine gravel	9	116
Well U-21		
Owner: T. M. Nelson Driller: Etheridge Plumbing Co.		

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well U-21--Continued		
Sand, yellow	10	10
Sand	10	20
Large gravel	10	30
Sand	20	50
Clay	20	70
Clay, sandy	20	90
Sand, fine	30	120
Sand, blue, coarse	12	132
*Well V-36		
Owner: Leroy Whitten	Driller: Marcus Blair	
Clay, yellow, sandy, soft	7	7
Clay, dark gray, sandy	13	20
Clay, gray, sandy, with gravel	20	40
Clay, light to dark gray, sandy	70	110
Clay, varicolored, sandy	20	130
Sand and sandy clay	78	208
Limestone, tan to gray, sandy, dolomitic	12	220
Limestone, tan to gray, sandy, dolomitic, fossiliferous	25	245
Clay, bluish-gray, sandy	15	260
Clay, dark gray, fissile	86	346
Limestone, yellowish-gray, sandy, fossiliferous	14	360
Limestone, yellowish-gray, fossiliferous, with hard ledges	10	370
Limestone, yellowish-gray, fossiliferous, softer than above	60	430
Sand, medium to very coarse	10	440
Sand, gray, medium, clayey	10	450
Clay, grayish-green, silty, fissile	50	500
Clay, gray, fossiliferous	30	530
Sandstone, greenish-yellow, glauconitic	25	555
Clay, green, silty	35	590
Sand, gray, fine-grained, glauconitic	20	610
No record	63	673
Sand, white, coarse-grained, glauconitic	37	710

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

*Well V-36--Continued

* Log by J. C. Scott, U.S. Geological Survey

Well V-48

Owner: Y. C. Odom Driller: Etheridge Plumbing Co.

	Thickness (feet)	Depth (feet)
Sand and gravel	70	70
Clay	30	100
Sand and clay	90	190
Clay	10	200
Sand and shell	35	235

Well V-55

Owner: J. W. Capps Driller: Etheridge Plumbing Co.

	Thickness (feet)	Depth (feet)
Clay, gray and yellow, sandy	35	35
Clay, yellow, with limonite layers	5	40
Clay, blue, sandy	10	50
Limonite layer	5	55
Sand, fine to medium, and blue sandy clay	5	60
Clay, bluish-gray and yellow, and sand	20	80
Clay, sandy, with sand layers	20	100
Sand, medium to coarse, and sandy clay	40	140

Well W-2

Owner: Albert Miller Driller: Marcus Blair

	Thickness (feet)	Depth (feet)
Clay, varicolored, sandy	150	150
Sand	25	175

Well W-4

Owner: Container Corporation of America Driller: Layne-Central Co.

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well W-4--Continued		
Clay, sandy	13	13
Clay	17	30
Hard pan	2	32
Clay, sandy	3	35
Gravel	6	41
Clay, sandy	10	51
Clay, gray, hard	15	66
Clay, gray, soft	30	96
Clay, sandy, hard	14	110
Lime rock with soft streaks	38	148
Clay, sandy	7	155
Sand, white, fine	23	178
Sand, white, fine	21	199
Sand, white, fine	11	210
Clay, blue	3	213
Lime rock	36	249
Rock, hard	6	255
Lime, soft	3	258
Rock, hard	2	260
Sand, draggy	5	265
Rock, hard	10	275
Shale, sandy	14	289
Sand	1	290
Clay	8	298
Shale, sandy	10	308
Clay, soft	29	337
Sand, very fine, muddy	22	359
Clay and sand streaks	4	363
Rock	1	364
Clay, hard	25	389
Rock	5	394
Lime rock, hard and soft	35	429
Lime rock, firm	19	448
Lime, hard and soft	12	460
Sand	4	464
Lime, hard and soft	6	470
Lime, sandy, soft	11	481
Clay, sandy, soft	10	491
Clay, sandy, soft	12	503

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well W-4--Continued		
Lime, sandy, hard	11	514
Lime, sandy, hard	5	519
Rock, hard	2	521
Lime, hard	15	536
Lime, hard and soft	23	559
Lime, sandy	22	581
Rock	1	582
Sand, fine, draggy	4	586
Clay, hard	18	604
Clay, hard	10	614
Rock breaks and softer clay	10	624
Sand, fine	3	627
Sand, fine, draggy	5	632
Clay	1	633
Sand, draggy	7	640
Rock break, sand and rock breaks	5	645
Clay	4	649
Clay, sandy streaks	16	665
Clay, hard	7	672
Clay and rock breaks	8	680
Rock, hard	1	681
Clay, soft	2	683
Sand, fine, muddy, and streaks of rock	11	694
Clay	4	698
Sand, fine, muddy	7	705
Rock	1	706
Clay, hard	10	716
Clay	3	719
Sand, hard, muddy	10	729
Sand, hard, full of lignite	8	737
Clay, hard	2	739
Clay	4	743
Rock	21	764
No record	21	785
Lime rock, hard	45	830
Lime rock, sandy	11	841
Sand	2	843
Shale	10	853
Clay, hard	2	855

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well W-4--Continued		
Lime, soft	9	864
Rock	7	871
Lime, soft	5	876
Rock, hard, with soft clay breaks	24	900
Lime, soft and hard, with traces of shale	30	930
Rock	2	932
Sand, very fine, muddy	12	944
Rock	2	946
Sand, fine, with streaks of clay	21	967
Rock	2	969
Sand, fine, muddy	13	982
Rock	1	983
Clay	4	987
Sand, fine, and streaks of clay	24	1,011
Rock	1	1,012
Clay, sandy	4	1,016
Clay, hard	14	1,030
Rock	1	1,031
Clay, hard	4	1,035
Sand	6	1,041
Rock	1	1,042
Clay, hard, and rock breaks	5	1,047
Rock	1	1,048
Clay, hard	6	1,054

Well W-5

Owner: Cravers Funeral Home Driller: Holland Drilling Co.

	Thickness (feet)	Depth (feet)
Surface sand and clay	20	20
Clay, blue, hard	30	50
Sand, yellow, with clay breaks	30	80
Clay, sandy	35	115
Clay with sand breaks	25	140
Clay, hard	30	170
Sand, fine	10	180
Clay	36	216
Sand, fine to medium	40	256

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well W-19		
Owner: Joe Jackson Driller: Etheridge Plumbing Co.		
Clay, red, sandy	15	15
Sand and gravel	10	25
Clay	70	95
Sand	28	123
Well W-21		
Owner: L. P. Jackson Driller: Etheridge Plumbing Co.		
Clay	20	20
Gravel	25	45
Clay	180	225
Sand	21	246
Well W-23		
Owner: Charles Jackson Driller: Flo Drilling Co.		
Surface	12	12
Sand and gravel	6	18
Clay, varicolored, sandy	155	173
Sand, fine to medium, and pea gravel	30	203
Clay	70	273
Well W-25		
Owner: C. A. Rowell Driller: Etheridge Plumbing Co.		
Clay, red	10	10
Chalk	90	100
Sand	10	110
Chalk	100	210
Sand, very coarse	10	220
Sand, gray, very coarse	20	240

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well W-33		
Owner: Glenn Bailey Driller: Etheridge Plumbing Co.		
Clay	10	10
Chalk	30	40
White sand	20	60
Chalk	2	62
Well W-34		
Owner: Thelma Smith Driller: Etheridge Plumbing Co.		
Surface soil	10	10
Sand	35	45
Sand and clay	20	65
Sand	18	83
Well W-41		
Owner: Arthur Chavers Driller: Etheridge Plumbing Co.		
Surface clay	5	5
Gravel, large	15	20
Clay, blue, or chalk	120	140
Sand	10	150
Pea gravel, white and blue	30	180
Well W-46		
Owner: Robert W. Segrest Driller: Etheridge Plumbing Co.		
Clay	10	10
Sand and gravel	10	20
Clay	75	95
Sand	25	120

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well W-63		
Owner: Walter Lowry Driller: Etheridge Plumbing Co.		
Clay	130	130
Clay, sandy	70	200
Sand	25	225
Well W-65		
Owner: J. L. Jernigan, Jr. Driller: Etheridge Plumbing Co.		
Sand	28	28
Clay	72	100
Clay, sandy	140	240
Sand, fine	20	260
Clay	40	300
Sand, fine	50	350
Clay	20	370
Limestone	80	450
Sand	60	510
Well W-71		
Owner: A. J. Lister Driller: Etheridge Plumbing Co.		
Sand and gravel	65	65
Clay	75	140
Clay, sandy	20	160
Clay	75	235
Sand and pea gravel	45	280
Well W-77		
Owner: J. H. Brantley Driller: Etheridge Plumbing Co.		
Clay	10	10
Sand, red	5	15
Clay	50	65

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well W-77--Continued		
Clay, red, sandy	10	75
Clay	45	120
Sand	5	125
Clay	35	160
Well W-78		
Owner: E. Nowling Driller: Etheridge Plumbing Co.		
Sand and gravel	10	10
Clay, sandy	180	190
Sand	30	220
Well W-81		
Owner: Gus Turner Driller: Etheridge Plumbing Co.		
Clay	10	10
Chalk	130	140
Clay, sandy	40	180
Sand	32	212
Well W-85		
Owner: Bert Turner Driller: Etheridge Plumbing Co.		
Clay	40	40
Sand	5	45
Clay	15	60
Sand	5	65
Clay	30	95
Sand	5	100
Clay	40	140
Sand	33	173

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
*Well W-98		
Owner: A. C. Congleton Driller: Etheridge Plumbing Co.		
Clay, brown to gray, sandy	20	20
Sand, white, fine	3	23
Sand, white, coarse to very coarse, poorly sorted, with gravel.	17	40
Clay, yellow, plastic	6	46
Clay, blue, red, and gray	27	73
Clay, gray and yellow, sandy, with sand and gravel breaks.	23	96
Sand, white, medium and very coarse, with clay breaks and limonite	21	117
Sand, white, coarse, with white gravel, lignite, and pyrite	10	127
Clay, gray to yellow, sandy, with gravel breaks	10	137
Sand, white, fine to medium, some gravel	5	142
Clay, gray and yellow, sandy, soft	4	146
Clay, gray, very soft, with very fossiliferous sand	15	161
Clay, gray to yellow, fossiliferous	63	224
Sand, white, very fine to medium, rounded to subangular, fairly well sorted	86	310

* Log by B. L. Floyd, U.S. Geological Survey

	Thickness (feet)	Depth (feet)
*Well W-136		
Owner: Troy Brannon Driller: Etheridge Plumbing Co.		
Clay, variegated	20	20
Clay, red, and white sand	21	41
Clay, blue and red, soft to medium hard	69	110
Sand, white, very fine to medium	13	123
Sand, white, very fine to medium, with clay layers	20	143
Clay, blue, plastic, with fossil fragments	27	170
Sand, white, fine to coarse, with fossil fragments	14	184
Clay, dark blue, sandy	62	246
Sand, gray, fine to coarse	20	266
Sand, gray, medium to very coarse, with fine gravel and some lignite	62	328

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
*Well W-136--Continued		
Sand, gray, very fine to medium, micaceous, with sandy clay layers	22	350
Limestone, tan, sandy, with sandy clay layers	29	379
Limestone, tan, sandy, with limey clay streaks	10	389
Clay, blue-green, limey, fossiliferous	21	410
Sand, white, medium	10	420

* Log by J. W. Cagle, U.S. Geological Survey

Well W-140

Owner: H. C. Barnes Driller: Etheridge Plumbing Co.

	Thickness (feet)	Depth (feet)
Sand and gravel	20	20
Clay	90	110
Sand	47	157

Well X-1

Owner: E. L. Golden Driller: Etheridge Plumbing Co.

	Thickness (feet)	Depth (feet)
Sandy soil	10	10
Sand, red	40	50
Sand, white, and gravel	30	80

Well X-9

Owner: Sidney Boutwell Driller: Etheridge Plumbing Co.

	Thickness (feet)	Depth (feet)
Clay, red, sandy	10	10
Sand, red	20	30
Gravel	8	38
Clay	12	50
Sand and gravel	20	70

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well X-12		
Owner: S. M. Burkett Driller: Etheridge Plumbing Co.		
Clay	10	10
Sand and gravel	28	38
Clay	27	65
Sand	23	88
Well X-16		
Owner: F. J. Knowles Driller: Etheridge Plumbing Co.		
Sandy soil	10	10
Clay	10	20
Gravel	20	40
Sand and gravel	34	74
Well X-18		
Owner: S. E. Emmons Driller: Etheridge Plumbing Co.		
Clay	25	25
Sand and gravel	75	100
Well X-19		
Owner: J. B. Golden Driller: Etheridge Plumbing Co.		
Clay, red, sandy	20	20
Sand, red, and gravel	20	40
Clay	10	50
Sand, white, and gravel	78	128
Well X-23		
Owner: Solomon Hammoc Driller: Etheridge Plumbing Co.		

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well X-23--Continued		
Clay	10	10
Sand	10	20
Clay	20	40
Sand and gravel	70	110
Well X-39		
Owner: W. R. Odom — Driller: Etheridge Plumbing Co.		
Clay, red, and gravel	20	20
Sand and gravel	45	65
Well X-41		
Owner: Ernest Emmons — Driller: Etheridge Plumbing Co.		
Clay, red, sandy	20	20
Sand and gravel	54	74
Well X-46		
Owner: L. W. Jordon — Driller: Etheridge Plumbing Co.		
Clay	10	10
Sand and gravel	20	30
Clay	100	130
Sand	20	150
Well X-56		
Owner: R. J. Bush — Driller: Etheridge Plumbing Co.		
Chalk	15	15
Sand	5	20
Clay, sandy	3	23

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well X-56--Continued		
Sand	17	40
Well X-60		
Owner: Powell's Cafe Driller: Etheridge Plumbing Co.		
Sand and gravel	20	20
Clay	115	135
Sand and pea gravel	35	170
Well X-106		
Owner: City of Flomaton Driller: Spellers Well and Pump Co.		
Mud, blue	12	12
Sand	20	32
Clay, yellow	42	74
Sand, muddy	16	90
Sand, medium	30	120
Sand, coarse	27	147
Shale, blue	18	165
Well X-107		
Owner: City of Flomaton Driller: Gray Artesian Well Co.		
Clay, yellow, sandy	5	5
Sand, coarse, and fine gravel	7	12
Gravel, coarse, water	3	15
Pea gravel	12	27
Gravel and clay	8	35
Chalk, gray, and gravel	5	40
Clay, tough	26	66
Sand	54	120
Sand, coarse	25	145
Sand, coarse, and gravel	7	152

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well X-107--Continued		
Sand, coarse, with gravel and chalk	7	159
Well Y-11		
Owner: Alfred Moye Driller: Etheridge Plumbing Co.		
Clay	20	20
Sand	20	40
Gravel	18	58
Clay	5	63
Sand	15	78
Clay	12	90
Sand and gravel	30	120
*Well Y-20		
Owner: C. J. Boutwell Driller: Flo Drilling Co.		
Surface sand and clay	10	10
Sand, pink to red, fine to medium	10	20
Sand and gravel	10	30
Clay, red, white, and yellow, silty, micaceous	10	40
Clay, light gray to yellow, sandy, micaceous	130	170
Sand, white, fine to medium, micaceous	10	180
Clay, red and yellow, sandy, micaceous	10	190
Sand, white, fine to medium	13	203
Clay, varicolored, micaceous	37	240
* Log by J. W. Cagle, U.S. Geological Survey		
Well Y-31		
Owner: Leon Johnson Driller: Etheridge Plumbing Co.		
Clay, red	20	20
Sand and gravel	30	50

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well Y-31--Continued		
Clay	8	58
Sand and gravel	24	82
Well Y-42		
Owner: Miles Horn — Driller: Etheridge Plumbing Co.		
Clay	40	40
Sand and gravel (little water)	20	60
Clay and chalk	20	80
Sand and pea gravel	40	120
Well Y-57		
Owner: W. H. Fountain — Driller: Etheridge Plumbing Co.		
Clay	10	10
Sand	10	20
Gravel	30	50
Sand	40	90
Well Z-6		
Owner: R. L. Goldsmith — Driller: Etheridge Plumbing Co.		
No record	50	50
Clay	15	65
Sand and gravel	33	98
Well Z-12		
Owner: J. R. Criswell — Driller: Etheridge Plumbing Co.		
Clay	20	20
Sand and gravel	50	70

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well Z-16		
Owner: C. I. Davison Driller: Etheridge Plumbing Co.		
Sand, red, and gravel	20	20
Sand, coarse, and pea gravel	41	61
Well Z-20		
Owner: A. C. Murph Driller: Etheridge Plumbing Co.		
No record	20	20
Sand and clay	20	40
Gravel	14	54
Clay	31	85
Sand and gravel	35	120
Well Z-70		
Owner: W. M. Carney Mill Co. Driller: Gray Artesian Well Co.		
Hard pan and gravel	50	50
Gravel	10	60
Sand and clay	20	80
Gravel and sand	45	125
Quicksand	28	153
Well Z-72		
Owner: City of Atmore Driller: Layne-Central Co.		
Soil	1	1
Clay	3	4
Rock	11	15
Sand and clay	20	35
Sand, fine, and gravel	26	61
Boulder	1	62
Sand and gravel	9	71
Clay, tough	11	82

	Thickness (feet)	Depth (feet)

Well Z-72--Continued

Sand	5	87
Gravel, medium	7	94
Sand, coarse	35	129

Well Z-73

Owner: City of Atmore Driller: Gray Artesian Well Co.

Clay	18	18
Sand and gravel	8	26
Clay, sandy	61	87
Clay and sand	10	97
Sand and gravel	38	135
Clay, sandy	73	208
Sand and gravel	53	261
Clay, white	142	403

Well Z-76

Owner: R. L. Goldsmith Driller: Etheridge Plumbing Co.

Clay	20	20
Sand and gravel	62	82

Well Z-85

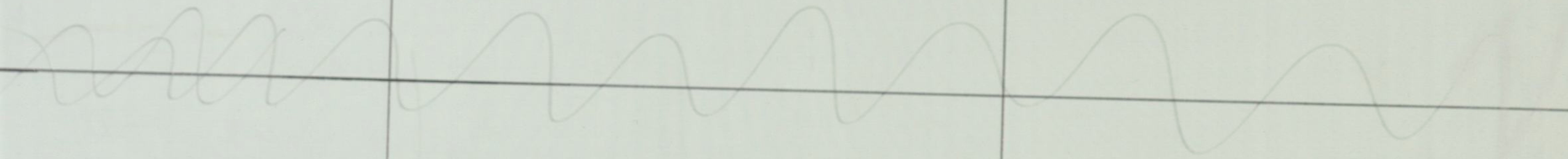
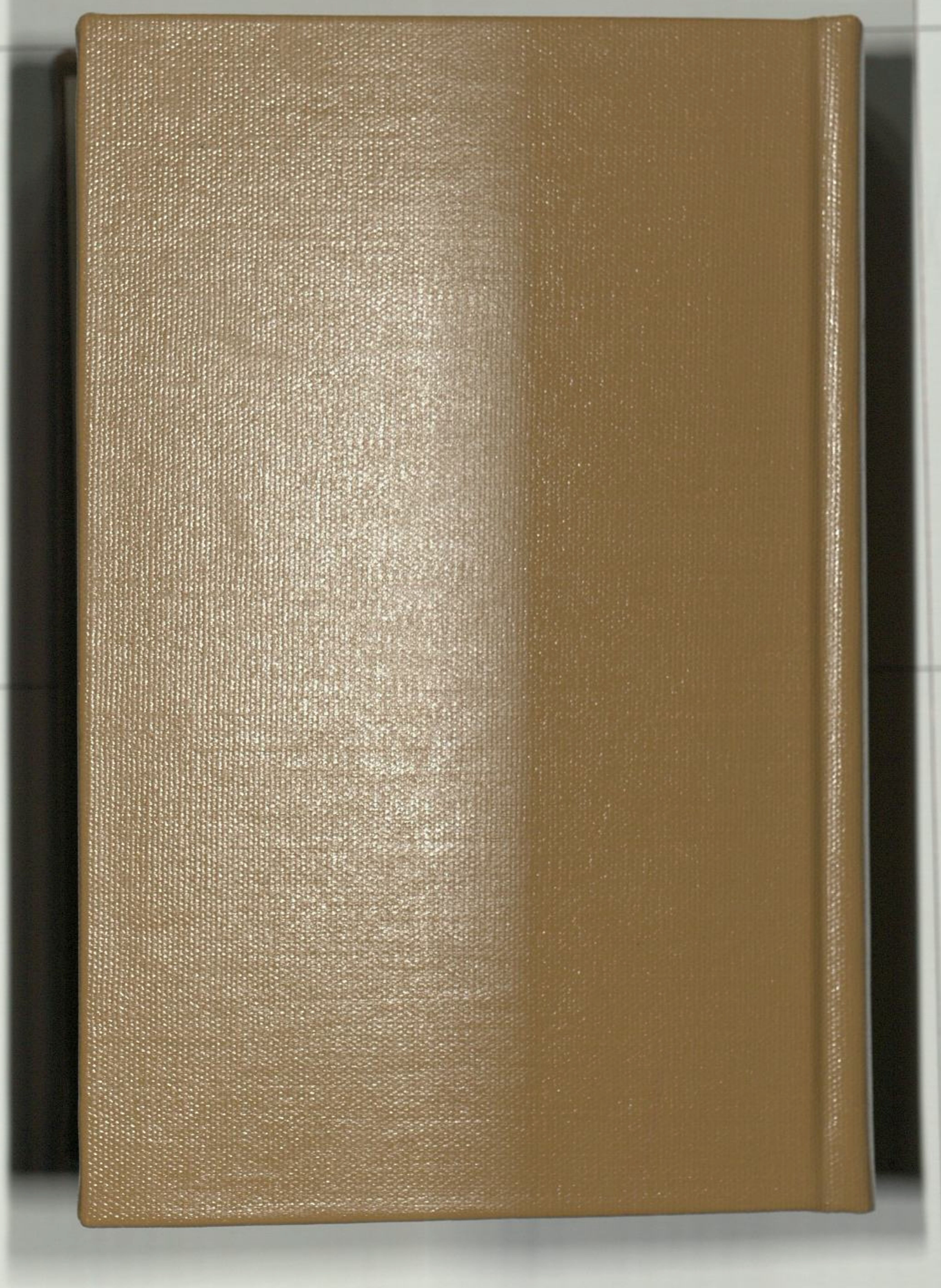
Owner: R. C. Lowrey Driller: Etheridge Plumbing Co.

Clay	10	10
Sand and gravel	51	61

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well Z-90		
Owner: J. T. Hobbs	Driller: Etheridge Plumbing Co.	
Clay	10	10
Sand and gravel	40	50
Well Z-93		
Owner: J. T. Moye	Driller: Etheridge Plumbing Co.	
Clay	20	20
Sand	10	30
Gravel, large, and sand	20	50
Well AA-4		
Owner: B. W. Carter	Driller: Etheridge Plumbing Co.	
Clay, red	10	10
Sand and gravel	20	30
Sand, coarse	20	50
Well AA-27		
Owner: H. M. Cry	Driller: Atlas Drilling Co.	
Sand and clay	62	62
Sand, white	34	96
Clay	22	118
Sand	23	141
Clay	49	190
Sand	15	205
Clay	3	208
Sand	24	232

Table 7.—*Drillers' logs of wells in Escambia County, Ala.*—Continued

	Thickness (feet)	Depth (feet)
Well AA-29		
Owner: Comer Curry Driller: Etheridge Plumbing Co.		
Sand, red, and gravel	40	40
Clay	10	50
Sand, fine	15	65
Clay	5	70
Sand	40	110
Well AA-42		
Owner: H. D. Huckabee Driller: Etheridge Plumbing Co.		
Sand	30	30
Gravel	50	80
Sand	20	100